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PARTICIPATIVE WEB: USER-CREATED CONTENT

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This study is one of the series on Digital Broadband Content in the WPIE Programme of Work; it uses the same analytical approach as the previous digital content studies and builds on Chapter 7 of the OECD Information Technology Outlook 2006.

It takes into account comments and suggestions received from delegations at the WPIE meeting in December 2006 and written comments received subsequently. To enable this study to be a deliverable to the ICCP-organised Ministerial, the Chair suggested that the Secretariat circulate a revised version to delegations via email in early February 2007.

This revised paper is circulated for consideration for declassification by the ICCP Committee. As requested, the Secretariat is also preparing at document on further suggested work on the participative web for the next WPIE meeting in May 2007 (see summary record).

Other analysis is ongoing in the WPIE for the programme of work on: (i) film & video, (ii) online news distribution, and (iii) online advertising. These areas are inter-related with user-created content.

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SUMMARY

1.   The concept of the 'participative web' posits an Internet increasingly influenced by intelligent, web services based on new technologies empowering the user to be an increasing contributor to developing, rating, collaborating and distributing Internet content and customizing Internet applications. As the Internet is more embedded in people's lives, new user habits have arisen where 'users' draw on innovative Internet-based applications to express themselves through 'user-created content' (UCC). These novel forms of user creation and distribution are spurring social and economic opportunities.

2.   This study describes the tremendous growth of UCC on the web and its important role in worldwide communication and draws out implications for policy. Questions addressed include: What is user-created content? What are its key drivers, its scope and the different forms it takes? What are new value chains and business models? What are the extent and form of its social, cultural and economic impacts? What are associated challenges? Is there a government role and what form could it take?

Definition, measurement and drivers of user-created content

3.   The study recognizes that this is an emerging area, that there is no universally accepted definition of UCC and that we are in the early stages of measuring its social, cultural and economic impact. Still, the study proposes a definition for UCC which is built on three criteria: UCC content is (i) content made publicly available over the Internet (publication requirement), (ii) which reflects a "certain amount of creative effort" and (iii) which is "created outside of professional routines and practices".

4.   On the basis of this definition the study presents a taxonomy of the variety of UCC types and platforms hosting UCC currently found on the Internet. The study also identifies the drivers of UCC: technological drivers (e.g. more wide-spread broadband uptake, new web technologies which facilitate the posting, rating and aggregation of data), social drivers (e.g. demographic factors, attitudes towards privacy), economic drivers (e.g. the increased commercial involvement of Internet and media firms in the hosting of UCC) and legal drivers (e.g. the rise of more flexible licensing schemes).

5.   While several factors complicate the measurement of UCC, the available data confirms that broadband users produce and share content at a high rate in most OECD but also in non-OECD countries, and that uptake is particularly high with young generations (e.g. with 50% of Korean Internet users having a homepage and/or a blog). Given the strong network effects which are a characteristic of UCC sites, a small number of platforms draw large amounts of traffic. Websites related to UCC, and especially online video sites and social networking sites, are developing to be the most popular worldwide websites, measured in traffic. However, the study also identifies measurement problems and identifies lack of data, calling for additional, reliable economic statistics on UCC-related goods and services for the sake of policymakers.

Emerging value chains and business models

6.   Currently, the vast majority of user-created content is done without the expectation of profit or remuneration as a result. Motivating factors include connecting with peers, achieving a certain level of fame, notoriety, or prestige, and the desire to express oneself. Defining a value-chain for UCC in the traditional, commercial sense as done in the case of other OECD studies on digital content sectors is thus more difficult.

7.   Here the value-chain and distribution model for UCC is contrasted to a simplified traditional and offline media publishing value chain to grasp the main difference. From a creator's point of view, the traditional media publishing value chain is characterised by a number of hurdles, i.e. publication and distribution of content depends on various entities selecting and consenting to a creator's work. The creation of the work to be published and its physical distribution can be expensive undertakings. A certain technical and content quality - although the latter is hard to define - is guaranteed through the choice of the traditional media 'gatekeepers'. Relative to the potential creative supply, only few available works make it through to airing on television and other media.

8.   In contrast, in the UCC value chain users create content for or on UCC platforms while using devices (e.g. digital cameras), software (video editing tools), the UCC platforms themselves and an Internet access provider to create and post content. A likely greater supply of creative content based on a greater number of active creators is available, potentially in a lower or greater diversity of technical and content quality, yet engaging viewers. Similarly to artists in the traditional media chain, users are also inspired and build on existing works.   The selection of which content works and which content does not is done by the users themselves, namely through recommending and rating, possibly leading some creators to recognition which would not have been selected by traditional media publishers.

9.   While until recently sites hosting UCC where essentially non-commercial ventures of enthusiasts or start-ups with little or no revenues the study shows that commercial entities, including media companies, are playing an increasing role in supporting, searching, aggregating, filtering, hosting, and diffusing UCC. Direct revenue generation from this phenomenon for the creators of the content or for established commercial entities (e.g. media companies) are only starting to emerge. Most models are still in flux and currently few providers generate direct substantial revenues or profits. Different UCC types (e.g., blogs versus video content) have different albeit very similar approaches to monetising UCC. Essentially five models are presented: (i) models based on voluntary contributions, (ii) charging viewers for services (pay-per-item or subscription models – including the bundling into existing subscriptions), (ii) advertising-based models, (iv) licensing of content and technology to third parties, and (v) selling of goods and services to the community ('monetising the audience via online sales'). These models can be paired with approaches that remunerate the actual user creators, either by having them participate in the revenues generated by the UCC platform or by direct payments through other users.

Economic impacts of user-created content

10.   The production and consumption of UCC has been accompanied by a number of promises and distinct and verifiable social and behavioural changes which are centred on a more participatory and active society. In principle, these impacts are likely to be only in their early stage with the longer-term impacts yet unclear. Also, they cannot be seen in isolation but invariably have economic impacts.

11.   Despite the non-commercial context, user-created content is already an important economic phenomenon. While a few months ago, the lack of digital broadband content had been deplored, UCC has actively and effectively contributed to its availability. The spread of UCC and the amount of attention devoted to this area by users seems to be a significant disruptive force for how content is created, consumed and for the industries traditionally supplying content. This disruption creates economic opportunities and challenges which vary according to market participants and their strategies. Also, the trend towards monetisation of UCC is just starting and often figures on impacts directly attributable to the phenomenon are not available.

12.   The more immediate positive impacts in terms of growth, market entry of new firms and employment are currently with ICT goods and services providers and newly forming UCC platforms which attract significant investment. New forms of digital content innovations seem less based on traditional scale

advantages and large up-front investments but more based on decentralized creativity, organizational innovation and new value models. These factors favour new entrants. Another set of firms particularly active in monetising UCC are search engines, portals, and aggregators which are seeking to formulate business models which are often based on online advertisement and marketing. On social networking sites, for example, brands increasingly create special sub-sites with social branding. New forms of advertising are emerging in virtual worlds.

13.   The lasting impacts of the shift to Internet-based media – both in terms of challenges and opportunities - are only starting to affect content publishers and broadcasters. The involvement of media publishers in the hosting and diffusion of UCC are at an early stage. At the outset, UCC may have been perceived as a challenge and competition to established media firms (i) as users may create and watch UCC at the expense of other traditional media potentially impacting advertising revenues in a negative way, (ii) as users are becoming more selective in their media consumption (especially younger generations), (iii) as some UCC platforms host unauthorised content from media publishers.

14.   Ever more seen as an opportunity or at least a market reality, however, the advent of UCC marks a shift among media organisations from creating on-line content to creating the facilities and framework for non-media professionals to publish in prominent places. For a start, traditional media make their own websites and services more interactive by providing the ability for users to comment, provide feedback, rate particular articles and content and diffuse their content. More and more, media companies such as TV select UCC for use on their usual channels and license content to UCC platforms to participate in the revenue being generated and to exploit cross-promotion opportunities and ways of extending on-air programs and brands to UCC platforms.

15.   The impact of UCC on certain independent or syndicated content producers which previously did not face competition from Internet users or regular households is at matter of debate. Photographers, graphic designers, free-lance journalists and other such professional categories who made their living on the basis of providing pictures, news videos, articles or other content have started to feel the competition from freely provided amateur-created content.

Social impacts of user-created content

16.   At the outset, the creation of content by users is often perceived as a social phenomenon with social implications. The Internet being a new outlet for creativity has altered the nature and the economics of information production and led to the democratisation of media production (sometimes referred to as the 'rise or return of amateurs').

17.   On the side of social opportunities, the changes in the way users produce, distribute, access and re-use information, knowledge and entertainment potentially leading to three cross-sectional trends: increased user autonomy; increased participation, and increased diversity. Changes include lower entry barriers, lower distribution costs, lower costs to users, greater diversity of works with shelf space in the digital media being almost limitless. The Internet and UCC also lead to a change concerning the nature of communication and related social relationships. These opportunities are likely to have structural impacts on the cultural, social, political sphere and economics, respectively.

18.   UCC which harnesses the collective intelligence of all users and to which users often contribute for free are potentially influential mechanisms to provide citizens, students and consumers with information and knowledge and lead to improved ICT skills. Educational UCC content tends to be collaborative and encourage sharing and peer-production of content, ideas, opinions and knowledge. Often educational projects can also build on participative web technologies such as podcasts to improve the quality and reach of education. Discussion fora on various topics but also product reviews potentially lead

to more informed user and consumer decisions (e.g. fora to discuss health-related questions, book recommendations).

19.   The cultural impacts of this social phenomenon seem far-reaching with creativity at different levels being affected by new and different ways of creating and diffusing content and new interactions between creators, users and consumers. According to the long tail principle, a more diverse set of cultural content will now find a niche audience, a substantial increase in the availability of content and culture to users, and potentially produce a range of creativity. A number of artists have already gained prominence while using UCC platforms to gain recognition. Talent agencies, media publishers and Internet sites now use UCC platforms to discover gifted artists.

20.   UCC can also be seen as an open platform enriching the diversity of opinions, various political and societal debates, the free flow of information and the freedom of expression. As users raise questions, inquire, and as new decentralised approaches to content creation are being taken up, the political debate, transparency and also certain 'watchdog' functions may be enhanced. Citizen journalism, for instance, allows users to influence or create news, potentially on similar terms as newspapers, companies or other major entities. Effects may include a greater call for precision within the mainstream media, as users point out inaccuracies and flaws online. Furthermore, the impacts of UCC have not gone unnoticed by politicians. Blogs, social networking sites, and even virtual worlds can be platforms for exchanging political views, provoking debate and sharing of knowledge about societal questions. Social networking and other UCC sites are an increasingly recognised tool to engage the electorate.

21.   On the side of social challenges, the topics of inclusion, cultural fragmentation and issues related to security, privacy and content quality have been raised. A greater disconnect between digitally literate users and others who are excluded from it may occur (i.e. social fragmentation, intergenerational gaps). Cultural fragmentation may also take place as different citizens may not share a common core/set of shared cultural content anymore as UCC leads to greater individualization of the cultural environment. Other challenges relate to information accuracy and content quality (including the problem of inappropriate or illegal content). While accuracy and quality of information is assured in institutional contexts, it may, however, be a problem in Internet-based settings where everybody can contribute without detailed checks and balances. Other issues relate to copyright infringements, privacy, safety on the Internet and possibly adverse impacts of intensive Internet use.

Opportunities and challenges for users, business and policy

22.   The rapid rise of UCC is also raising novel questions for users, business and policy. This study produces a first policy analysis of this new field. It is backed up by a review of the terms of service of a spectrum of 15 commonly used English-speaking commercial UCC platforms. Following the OECD Digital Content Policy Framework, the policy issues are discussed under six headings: (i) enhancing R&D, innovation and technology, (ii) developing a competitive, non-discriminatory framework environment, (iii) enhancing the infrastructure, (iv) shaping business and regulatory environments, (v) considering governments as producers and users of content, and (vi) better measurement.

23.   Next to standard policy topics such as ensuring wide-spread broadband access and innovation, particularly interesting questions emerge around the question on if and how governments should support UCC. In the light of increased commercial activity and strong networks effects and potential for lock-in, the maintenance of a common level-playing field also seems particularly important. UCC is also contributing to putting existing regulatory arrangements and the traditional separation between broadcasting and telecommunications regulations to a test. With the emergence of increasingly advertisement-based business models and unsolicited email and marketing messages, rules on advertising

will play a particular role in the UCC environment (e.g. product placements in virtual worlds, and in the context of advertising to children).

24.   When it comes to the regulatory environment, some of the more important questions relate to the interrelationship between intellectual property rights and UCC, with different kinds of UCC having different copyright implications. In the digital environment the key questions are how to define 'fair use' and other copyright exceptions when citations and compilations are increasingly prevalent and easy. Also, the general question for UCC is what the effects of copyright on non-professional and new sources of creativity are, and whether it needs to be re-examined in view of the online environment to allow for the coexistence of market and non-market creation and distribution of content. In addition, questions concerning the copyright liability of UCC platforms hosting potentially unauthorised content and the impacts of digital rights management are raised.

25.   Other business and policy issues raised are: (i) how to preserve the freedom of expression made possible by UCC, (ii) problems relating to information and content quality/accuracy and tools to resolve these, (iii) issues related to mature, inappropriate, and illegal content and self-regulatory (e.g. community standards) or technical solutions (e.g. filtering software), (iv) improving the safety on the 'anonymous' Internet, (v) dealing with new issues surrounding privacy and identity theft, (vi) monitoring the impacts of intensive Internet use, (vii) network security and spam, and (vii) understanding regulatory questions arising due to the increasing prevalence of virtual worlds. Finally, the study questions the role for government (including public broadcasters, museums) in this field.

PARTICIPATIVE WEB: USER-CREATED CONTENT (UCC)

INTRODUCTION

26.	Wide creative participation in developing digital content, driven by rapidly diffusing broadband access and new software tools, is a new feature of society and the economy. Initial work on the participative web was developed for the *Information Technology Outlook 2006*, [1] and sudden awareness of the growth and potential impacts of user-created content was one of the main outcomes of the international conference on *The Future Digital Economy: Digital Content Creation, Distribution and Access* organised by the OECD and the government of Italy in January 2006.[2]

27.	As the Digital Content Conference progressed, participants increasingly observed that the Internet is embedded in people's lives and that with the rise of a more 'participative web' an inflection point for its impact on governance and civic life has been reached (OECD, 2006a, b). New user habits where 'users' draw on new Internet-based applications to express themselves through 'user-created content' and take a more active and collaborative role in content 'creation and consumption' were central topics. More active users, consumers and user-centred innovation were seen to have increasing economic impacts. These new forms of user creation and distribution are spurring new business models, presenting challenges for access to content, and are starting to bypass, intersect with, and create new opportunities for established media and other industries.

28.	As an extension of existing OECD work, this study explores the rise, development and actual and potential impacts of user-created content (UCC) in greater detail, and draws out implications for policy.[3] Questions addressed include: What is user-created content? What are its key drivers, its scope and the different forms it takes? What are new value chains and business models? What are the extent and form of its social, cultural and economic impacts? What are associated challenges? Is there a government role and, if there is, what form could it take?

29.	The analysis is structured in six main parts. The first part defines UCC. The second and third parts identify the key drivers of UCC and provide a broad overview of various UCC types and related distribution platforms. The fourth part analyses associated 'value' chains and new business models while the fifth part examines social and economic impacts of UCC. The final part analyses opportunities and challenges for users, businesses and government.

30.	 Certain questions are raised by this paper which are only answered in part, mainly because developments are very recent and general trends, developments and policy are not clear as yet.

31.	While the development of open source software is often included in discussion of the participative web, this topic is excluded from the scope of this study. In terms of impacts, such large-scale collaborative efforts may merit further attention.

DEFINING AND MEASURING THE PARTICIPATIVE WEB AND
USER-CREATED CONTENT

Definition

32.   The use of the Internet is characterised by increased participation and interaction of Internet users who use it to communicate and express themselves. The most prominent concept to describe this evolution which uses the Internet's inherent capabilities more extensively is called 'participative web'. It posits an Internet increasingly influenced by intelligent, web services based on new technologies empowering the user to be an increasing contributor to developing, rating, collaborating and distributing Internet content and developing and customizing Internet applications (O'Reilly, 2002, 2005; MIC, 2006; OECD, 2006b). These new web tools are said to enable commercial and non-commercial service providers to better harness the 'collective intelligence' of Internet users, using information and knowledge embedded in the Web in the form of data, metadata, user participation and creating links between these. One characteristic of the participative web is also the communication between users and between different separate software applications via open web standards and web interfaces.

33.   The rise of user-created content (UCC) (French: 'contenu auto-produit') or the so-called 'rise of the amateur creators' is one of the main features of the so-called participative web.[4] This comprises various forms of media and creative works (written, audio, visual, and combined) created by Internet and technology users. Despite frequent references to this topic by media and experts, no commonly agreed definition of user-created content exists.[5] Also referred to as 'user-generated' content, sources such as Wikipedia refer to it as '*on-line content that is produced by users [*i.e. non-media professionals (i.e. 'ordinary people')*] as opposed to traditional media producers such as broadcasters and production companies. […]".*[6] A central aspect is also that users recommend and rate content.

34.   To have a more solid understanding of UCC, it is useful to agree on the characteristics of user-created content (i.e. an indication of what is UCC and what is not). Three central characteristics are proposed. However, UCC is hard to define and based on criteria which are likely to evolve in time. As such these characteristics only lay the ground for identifying a possible spectrum of UCC.

- **Publication requirement**: While theoretically UCC could be made by a user and never actually be published online or elsewhere, we focus here on the work that is *published* in some context, be it on a publicly accessible website or on a page on a social networking site only accessible to a select group of people (*i.e.* fellow university students). This is a useful way to exclude email, bilateral instant messages and the like.

- **Creative effort**: This implies that a *certain amount of creative effort was put into creating the work or adapting existing works to construct a new one*; i.e. users must add their own value to the work. The creative effort behind UCC often also has a collaborative element to it, as is the case with websites which users can edit collaboratively. For example, merely copying a portion of a television show and posting it to an online video website (an activity frequently seen on the UCC sites) would not be considered UCC. However, if a user uploads his/her photographs, expresses his/her thoughts in a blog, or creates a new music video this could be considered UCC. Yet the minimum amount of creative effort is hard to define and depends on the context.

- **Creation outside of professional routines and practises**: User-created content is generally created *outside of professional routines and practices.* It often does not have an institutional or a commercial, market context. In the extreme, UCC may be produced by non-professionals without the expectation of profit or remuneration. Motivating factors include: connecting with peers, achieving a certain level of fame, notoriety, or prestige, and the desire to express oneself.

35.   Although conceptually useful, the last characteristic is getting harder to maintain. While in the beginning UCC was a grassroots movement, there is now a trend towards the monetisation of UCC from the user-side (see section on economic impacts). Increasingly established media and Internet players are acquiring UCC platforms to derive revenues. At times users are being remunerated for their content and some users develop to be professionals after an initial phase of non-commercial activity. It is also important to remember that some works are created by professionals but in their spare time (e.g. professional video editors creating a film at home). The mere term UCC may thus be inadequate as content creators are much more than just 'users'. Still, the creation of content outside of a professional routine and organisation is a useful concept to separate it from content produced by commercial entities.

Measurement

36.   Measuring UCC is not straightforward. Several factors complicate such measurement: the decentralised nature of UCC production, the fact that the same UCC content is sometimes accessible on a variety of sites (problem of double-counting), the fact that not all registered users of UCC platforms are actually active users (inactive accounts), the problem of users setting up multiple accounts at the same site (problem counting unique users) and the sometimes difficult distinction between user-created and other content (such as the uploading of clips from copyrighted television shows). The first two factors may lead UCC platforms to overstate the figures about their active unique users.

37.   Currently also little official data from National Statistical Offices (NSO) are obtainable concerning the number of users creating content, the amount of such content that exists, the number of users accessing such content and the patterns that are emerging from such creation. NSOs have only started to include such questions in surveys (e.g., the European Union, Japan, Korea, Canada). It may take some time before official national data is available for all OECD countries in an internationally comparable way.

38.   Existing data however show that broadband Internet users produce and share content at a high rate and do not merely consume it. All data sources point to large intergenerational differences in web media usage and to considerable gender differences.

39.   Data available from national statistical surveys and the OECD show that the typical online behaviour of Internet users consists of the following activities: mainly search, consulting general interest and portals, using Internet tools and Web services such as email, e-commerce, using sites from software manufacturers, consulting classifieds and participating in auctions, using broadcast media, and financial services (OECD, 2004a; OECD, 2005a).

40.   When data is available on content creation, however, this is shown to be a very popular activity among young age groups. As shown for the European Union in Figure 1, posting messages to chat rooms, newsgroups or forums, using peer-to-peer file sharing sites and creating a webpage – the closest yet sometimes imperfect statistical proxies on offer for UCC - are already very popular among Internet users.[7] In countries such as Finland, Norway, Iceland, Portugal, Luxembourg, Hungary and Poland, in 2005 around one third of all Internet users aged 16-74 were engaged in these activities. One-fifth of all Internet users in some OECD countries report having created a webpage. Younger age groups are more active Internet content creators. In countries such as Hungary, Denmark, Iceland, Finland, Norway, Germany, Poland and Luxembourg (in increasing order), in 2005 between 60 and 70 per cent of Internet users aged 16-24 have posted messages to chat rooms, newsgroups or forums. One-fourth but sometimes half of all Internet users in some OECD countries in that age group have created a webpage. In France, about 37 % of teenagers have created a blog.[8] In 2005, 13 per cent of Europeans were 'regularly contributing to blogs' and another 12 per cent were 'downloading podcasts at least once a month' (European Commission, 2006).

Figure 1. User-created content in the EU, as a % of the number of Internet users; 2005

Age Group: 16-74 years

Age Group: 16-24 years
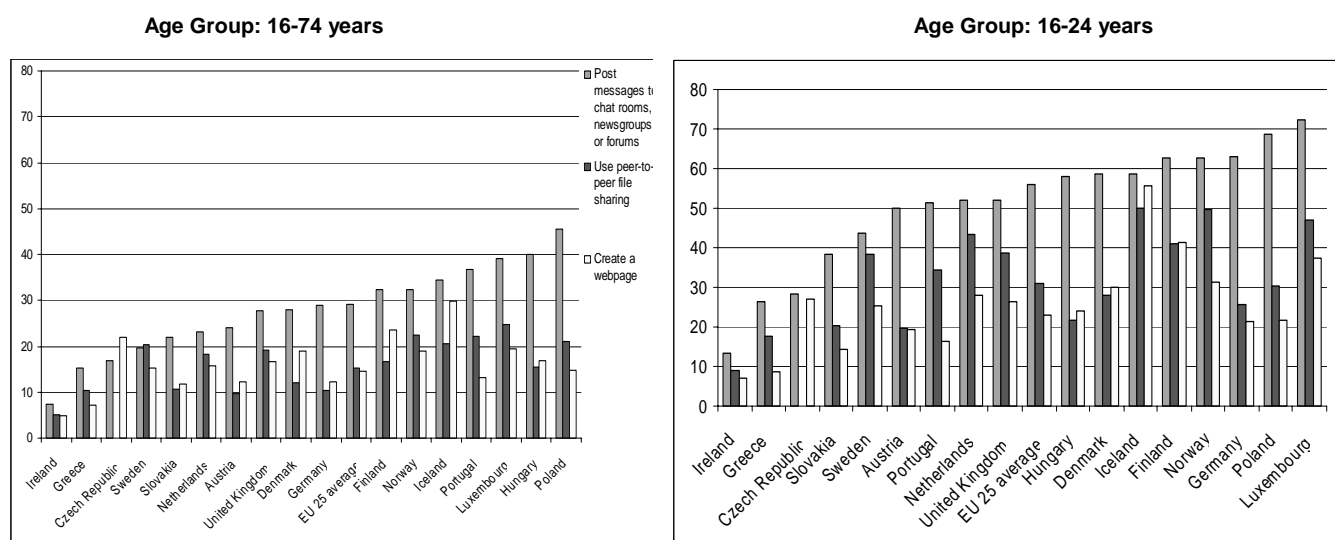
Source: OECD based on Eurostat.

41.　According to Table 1, 35% of all US broadband users have posted content to the Internet. For broadband users under the age of 30, 51% have placed content on the Internet, 25% have their own blogs, and 41% have posted content online they created themselves. 57% of teenagers in the US have created content on the Internet as of late 2004 (Lenhart, 2005). More than half (55%) of all of online American youths ages 12-17 use online social networking sites (Lenhart and Madden, 2007). In general, girls seem overproportionally active users of social networking sites for communication, chat and other forms of socialising and exchange, but less so when it comes to just viewing content on, for example, online video platforms.[9]

Table 1. User-created content in the United States, 2006

	All Internet users (in %)	Broadband at home (in %)	Americans with home Internet access who do activity (in millions)	Americans with Internet access only at places other than home or work (in millions)
Create or work on your own online journal or blog	8	11	9	2
Create or work on your own webpage	14	17	18	2
Create or work on webpages or blogs for other including friends, groups you belong to, or work	13	16	16	2
Share something online that you created yourself, such as your own artwork, photos, stories or videos	26	32	32	4
Percentage who have done at least one of the above 'content' activities	35	42	43	5

Source: OECD based on PEW Internet & American Life Project December 2005 survey. *Note*: Margin of error for Internet users is +/- 2%. See also the presentation of John B. Horrigan (Pew Internet & American Life Project) to the OECD.[10]

42.　Official data from Asia countries confirm this trend. Data for Japan show that blogs and social networking sites (SNS) are contributing to the substantial increase in the amount of information provided on the Internet (MIC, 2006). At of the end of March 2006, 8.7 million Japanese were registered as bloggers, and 7.2 million were registered as SNS members (see Figure 2). About one quarter of Japanese

Internet users over the age of 12 have experience in finding friends/acquaintances through the Internet and close one fifth have had exchanges with people they had not previously known. The age group which is in its 20s has the most experience in finding friends and acquaintances online. Also, women have more experience than men in this regard. Of those with experience in online exchanges with new people, 49.5% have met their new online acquaintances subsequently offline.[11]

43.   In Korea, the most recent Internet use survey shows about 50% of Korean Internet users use the Internet for managing homepages and/or blogs. In China, around 43.2 % of all Internet users use electronic bulletin boards, online communities and fora, instant messengers and 24% use a blog (CNNIC, 2006).

Figure 2. Number of registered blog and social networking site users in Japan, in millions
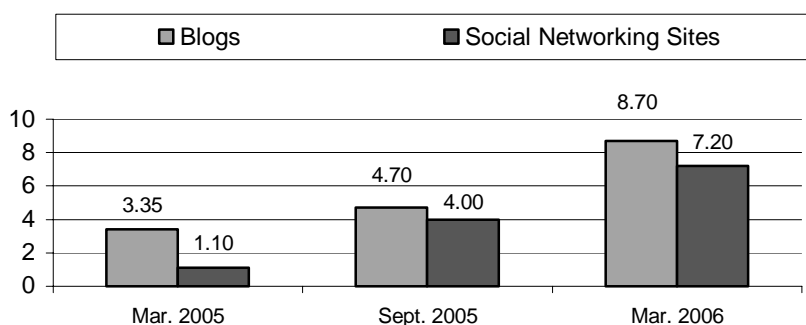
Source: U-Japan presentation at www.apectel34.org.nz/uploads/061016%20Kondo.pdf.

44.   With the rise of Internet measurement services which track Internet audience and traffic, new measurement tools are emerging. Given the ability of private data providers to track millions of users and their Internet activity anonymously (large, sample size with real-time flow of information and no need to gather data via surveys), the information available and the data quality from these sources is enabling the knowledge about Internet usage to expand. For instance, Hitwise, comScore or Nielsen NetRating, firms which measure Internet traffic, also demonstrate the increasing attraction of sites hosting UCC.[12] For instance, the five UCC sites that ranked in the top 50 in the UK (measured by total visitors that month) - Wikipedia, MySpace, Piczo, YouTube and Bebo — generated an average of 4.2 usage days and 79.9 minutes per visitor, according to comScore. By comparison, sites in the top 50 that were not based on UCC saw far less usage.

45.   These UCC sites have also experienced significant traffic growth over the past year. According to Internet traffic data of Alexa, YouTube continues to grow and the online video site is now ranked the number four web site in the world - behind only Yahoo, MSN and Google itself.[13] A study by Nielsen NetRating shows that in the UK UCC platforms for photo sharing, video sharing and blogging are among the fastest growing Web sites. In the US, UCC sites comprised five out of the top 10 fastest growing Web sites in July 2006. Among the top 10 web sites overall, MySpace was the No. 1 fastest growing, increasing to 46 million unique visitors in July 2006 (see Table 2). In countries such as Korea, UCC has contributed to reinvigorating the growth of certain web sites. Given the strong network effects which are a characteristic of UCC sites, a small number of platforms draw large amounts of traffic (i.e. a high concentration of users on only few platforms is likely).

46.   Internet measurement services created to measure the size of particular content types (such as Technorati for blogs) and data from the sites hosting UCC also point to this fast growth. Popular video sharing sites, for instance, serve more than one million videos every day and more than 50 thousand videos are uploaded every day. Anecdotal evidence is often brought forward to show that certain videos are shared widely, some being viewed by more than one million persons in a relatively short time (often referred to as

a 'viral' spread of content). Often the content being watched is created by friends, families, etc. Surveys claim that 62% of online content viewed by 21-year-olds is generated by someone they know.[14]

Table 2.   Fastest growing Web sites overall among US at-home and at-work Internet Users, July 2006

Firm	Type of Internet service	Number of unique visitors (in millions)	% growth of unique users from July 2005 to July 2006
HSBC	Bank	6.4	394
Sonic Solutions	Provider of digital media software	3.7	241
Associated Press	Press agency	9.7	234
ImageShack	Image hosting site	7.7	233
Heavy.com	Video sharing site	3	213
Flickr	Photo sharing site	6.3	201
ARTIST Direct	Online music platform including for emerging artists	3.2	185
Partypoker.com	Online gambling site	6	184
MySpace	Social network site	46	183
Wikipedia	Online community project	29.2	181

Source: Nielsen//NetRatings, July 2006, www.nielsen-netratings.com/pr/PR_060810.PDF. Shading indicates sites relevant to UCC. The term unique visitor refers to a person who visits a Web site more than once within a specified period of time.

47.   Finally, figures show that there are probably 200 million pieces of content on the Internet that are under various Creative Commons licenses (as counted by the number of 'link-backs' to these licenses on the Internet as tracked by Google).

DRIVERS OF USER-CREATED CONTENT

48.   The main technological, economic, and social drivers of UCC are outlined in Box 1.

49.   **Technological drivers**: Starting from the mid-to-late 1990s, with the first availability of household broadband, penetration grew steadily within the OECD countries and worldwide. The global transition to broadband drastically altered the environment in which users could create, post, and download content. Before the limitations of dialup connections meant that the vast amount of user content creation was restricted to text and simple, low quality graphics. With high speed connections, users can quickly upload larger media files. As fibre to the home is becoming increasingly important for broadband access[15], as wireless broadband is becoming more popular and as newer-generation ubiquitous networks spread, this trend is likely to amplify.

50.   Furthermore, during this time frame, processing speeds, and hard drive and flash memory capacities greatly increased while costs for the latter and consumer electronics needed to record UCC decreased (such as higher quality digital cameras, digital video recorders and mobile phones). New mobile phone platforms with High-Speed Uplink Packet Access (HSUPA) allowing for higher uplink data transmission speeds are expected to drive mobile UCC further as users are enabled to send and receive cell phone clips and pictures at higher speeds.

51.   More accessible software tools, such as html-generating software, but also software which enables users to edit and create audio and video without professional knowledge are a significant driving force. While most UCC is posted in various places on the Internet, the challenges of locating, distributing, and assessing the quality of the content has spurred on various other new technologies which facilitate tagging (i.e. the association of particular keywords with related content), podcasting, group rating and

aggregation, recommendations, content distribution (e.g. RSS[16] feeds which ensure that users automatically receive new posts and updates and file-sharing software), technologies allowing for interactive web applications and filtering such as Ajax, RSS, Atom, and content management systems needed for blogs and wikis (see Annex Box 6 and OECD, 2006b).

52.   The rise of sites and services hosting UCC was an additional necessary driver as not every user necessarily had available server space or the technical skills to post his or work. As the quality of cameras and video capabilities on phones grows and as phone networks are increasingly integrated with the Internet, this category of content is spreading more widely (e.g. mobile blogging). New video platforms such as Internet Protocol television services (e.g. transmission of TV programming over broadband using peer-to-peer technology and technologies allowing for high-resolution broadband video transmission on television screens) that will feature UCC and video game consoles geared to UCC can be expected to provide additional impetus.

Box 1. Examples of drivers of user-created content

Technological Drivers

Increased broadband availability

Increased hard drive capacity and processing speeds coupled with lower costs

Rise of technologies to create, distribute, and share content

Provision of simpler software tools for creating, editing, and remixing

Decrease in cost and increase in quality of consumer technology devices for audio, photo, and video

Rise of non-professional and professional UCC sites as outlets

Social Drivers

Shift to younger age groups ('digital natives') with substantial ICT skills, willingness to engage online (i.e. sharing content, recommending and rating content, etc.) and with less hesitation to reveal personal information online

Desire to create and express oneself and need for more interactivity than on traditional media platforms such as TV

Development of communities and collaborative projects

Spread of these social drivers throughout older age groups and to fulfil certain societal functions (social engagement, politics and education)

Economic Drivers

Lower costs and increased availability of tools for the creation of UCC (e.g. for creating, editing, hosting content) and lower entry barriers

Increased possibilities to finance related ventures and UCC sites through venture capital and other investment possibilities

Lower cost of broadband Internet connections

Increased interest of commercial entities to cater to the desire for user-created content and the long tail economics (including mobile operators, telecommunication service providers, traditional media publishers and search engines)

Greater availability of money related to advertising and new business models to monetise content

Institutional and Legal Drivers

Rise of schemes which provide more flexible access to creative works and the right to create derivative works (e.g. flexible licensing and copyright schemes such as the Creative Commons license)[17]

Rise of end-user licensing agreements which grant copyright to users for their content

Source: OECD.

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53.   **Social drivers:** The increased use of broadband, the desire for interactivity, the willingness to share, to contribute, to create online communities are changing the media consumption habits of Internet users (in particular of younger age groups, i.e. 12-17 years old). The social factor is likely to be one of the most important drivers in the years to come. UCC is only starting to move mainstream with currently only

a limited number of young, male early adopters and highly ICT-skilled persons using the Internet in this way. According to surveys, almost three-quarters of people who publish amateur video content online are under 25, and of those, 86 percent are male.[18] At the moment, user-created video is viewed by a large number of people but created by only a few users. As this demographic and usage habits change to older age groups (with young growing up) and with more average users and females creating UCC this trend will increase further.

54.   **Economic drivers:** In the last months, an increased desire to monetise UCC has built up. Especially media companies, the communications industry (in particular mobile operators), and other commercial players have identified the revenue potential behind UCC and are investing substantial amounts of money. The fear of losing revenues due to decreased interest in traditional media forms and the desire to cater to the so-called 'long tail' has served as important motivation.[19] This financial interest is also reflected in a further driver: the growing amount of financing and venture capital available to boost UCC related sites and services. In the United States, for instance, related participative web Internet technologies are said to have contributed to venture capital funding, the latter increasing by more than 40% from the third quarter of 2005 to the third quarter of 2006. According to some estimates, in the first half of 2006, venture capitalists put USD 262 million in commercial agreements related to participative web technologies.[20] While significant, however, total venture capital (VC) invested in ICT and media are still only about a quarter of the investments at the height of the VC boom in 2000.

55.   **Legal and institutional drivers:** The rise of new legal means to create and distribute content has also contributed to the greater availability and diffusion of UCC. Flexible licensing and copyright schemes such as the Creative Commons licenses allow easier distribution, copying and – depending on the choice of the author – the creation of derivative works of UCC.[21] Increasingly search engines and UCC platforms allow for searches within Creative Commons-licensed photos, videos or other content allowing other users to use, build on them while creating new content. The rise of end-user licensing agreements (e.g., Second Life) which grant copyright to users for their content may also be a significant driver.

TYPES OF USER-CREATED CONTENT AND DISTRIBUTION PLATFORMS

56.   A significant amount of user-created content relies on hosting services to provide an online space where one can access the content. The following gives an overview of the more common types of UCC and their distribution platforms (see Tables 3 and 4).[22]

57.   Often UCC types are intricately linked to specific UCC distribution platforms, i.e. comments being diffused on blogs, videos being diffused on online sharing platforms. As evidenced by both tables, UCC types and their distribution platforms are thus difficult to dissociate. Certain UCC distribution platforms such as podcasting can be used for music and video with various different purposes (entertainment, educational, etc.). Also, certain UCC distribution platforms such as social networking sites can be used to post music, videos, to blog, etc.

58.   Moreover, it needs to be kept in mind that participative web technologies often originally used for UCC can also be used to listen to traditional media, other commercial or even educational content (e.g. podcasts of well-known news magazines, games or social networking site used for the diffusion of commercial or educational content). Companies, for instance, make use of weblogs in order to keep employees informed about new products and strategies or on the progress of projects. This is outside the scope of this study.

Table 3.   Types of user-created content

Type of Content	Description	Examples
Text, novel and poetry	Original writings or expanding on other texts, novels, poems	Fanfiction.net, Quizilla.com, Writely
Photo/Images	Digital photographs taken by users and posted online; Photos or images created or modified by users	Photos posted on sites such as Ofoto and Flickr; Photo blogging; Remixed images
Music and Audio	Recording and/or editing one's own audio content and publishing, syndicating, and/or distributing it in digital format	Audio mash-ups, remixes, home-recorded music on bands websites or MySpace pages, Podcasting.
Video and Film	Recording and/or editing video content and posting it. Includes remixes of existing content, homemade content, and a combination of the two.	Movie trailer remixes; Lip synching videos; Video blogs and videocasting; Posting home videos; Hosting sites include YouTube and Google Video; Current TV
Citizen journalism	Journalistic reporting on current events done by ordinary citizens. Such citizens write news stories, blog posts, and take photos or videos of current events and post them online.	Sites such as OhmyNews, GlobalVoices and NowPublic; Photos and videos of newsworthy events; Blog posts reporting from the site of an event; Cooperative efforts such as CNN Exchange
Educational content	Content created in schools, universities, or with the purpose of educational use	Syllabus-sharing sites such as H20; Wikibooks, MIT's OpenCourseWare
Mobile content	Content that is created on mobile phones or other wireless devices such as text messaging, photos and videos. Generally sent to other users via MMS (Media Messaging Service), emailed, or uploaded to the Internet.	Videos and photos of public events, environments such as natural catastrophes that the traditional media may not be able to access; Text messages used for political organizing.
Virtual content	Content created within the context of an online virtual environment or integrated into it. Some virtual worlds allow content to be sold. User-created games are also on the rise.	Variety of virtual goods that can be developed and sold on Second Life including clothes, houses, artwork

59.   The following sections first describe a selection of UCC types and distribution platforms. Some UCC types such as video are so intricately linked to UCC platforms that they are only described once.

Table 4.   Distribution platforms for user-created content

Type of Platform	Description	Examples
Blogs	Web pages containing user-created entries updated at regular intervals and/or user-submitted content that was investigated outside of the traditional media	Popular blogs such as BoingBoing and Engadget; Blogs on sites such LiveJournal; MSN Spaces; CyWorld; Skyblog
Wikis and Other Text-Based Collaboration Formats	A wiki is a website that allows users to add, remove, or otherwise edit and change content collectively. Other sites allow users to log in and cooperate on the editing of particular documents.	Wikipedia; Sites providing wikis such as PBWiki, JotSpot, SocialText; Writing collaboration sites such as Writely
Sites allowing feedback on written works	Sites which allow writers and readers with a place to post and read stories, review stories and to communicate with other authors and readers through forums and chat rooms	FanFiction.Net
Group-based aggregation	Collecting links of online content and rating, tagging, and otherwise aggregating it collaboratively	Sites where users contribute links and rate them such as Digg; Sites where users post tagged bookmarks such as del.icio.us
Podcasting	A podcast is a multimedia file distributed over the Internet using syndication feeds, for playback on mobile devices and personal computers	iTunes, FeedBruner, iPodderX, WinAmp, @Podder
Social Network Sites	Sites allowing the creation of personal profiles	MySpace, Facebook, Friendster, Bebo, Orkut, Cyworld
Virtual Worlds	Online virtual environment.	Second Life, Active Worlds, Entropia Universe, and Dotsoul Cyberpark
Content or Filesharing sites	Legitimate sites that help share content between users and artists	Digital Media Project

Note: Podcasting, blogs and related technologies are also increasingly used in the professional context (OECD, 2006b).

UCC Formats

Text

60.   Users create texts, poems, novels, quizzes jokes and share them with a like-minded community. This allows for spreading of works of amateur authors and feedback from the community. Fan fiction is a term that describes creative writing (often short stories) that uses pre-existing characters from television, movies or other fiction. Fanfiction.net is such a fan site with thousands of stories, for instance, expanding on the tales of J. K. Rowlings characters in Harry Potter books. Quizilla.com is an online, user-creative community of original teen authors who create and share quizzes, fiction, non-fiction, poetry, etc. Writing collaboration sites such as Writely support collaborative work on texts.

Photo and Images

61.   User-created photos are generally taken with digital cameras. Photos may or may not be manipulated with photo editing software. Advances in the aggregation and search functionalities via tagging, user-implemented indicators, and recognition software have changed the landscape of digital photos. Content on certain sites is largely published under a Creative Commons license, building an attractive resource for web designers, publishers, journalists. There are numerous services that have

evolved around the hosting of photos, including Flickr, Ofoto,[23] and Snapfish. Flickr, the popular photo sharing service, currently hosts 200 million photos taken by 4 million users, 80% of which are made available publicly for others to access.

Music and Audio

62.   User-created audio content on the Internet varies widely, ranging from the combination of two or more songs into a single track to the posting of self-created music by amateur musicians to creating a radio-like broadcast show that users can subscribe to (i.e. podcasts). Audio content may be hosted on sites dedicated to remixing, on sites that provide podcasting services, traded on peer-to-peer networks, posted on social networking sites, and on personal homepages and websites. At this day, user-created music is rarely encompassed by digital music stores. While there is a significant amount of user-produced or –recorded music posted on the Internet, remixes have gained a certain level of notoriety. Remixing is quite common in various genres of music, including hip hop and electronic, and occurs within a professional context as well.[24] Artists such as David Bowie have encouraged users to mash-up their music (OECD, 2005b).[25]

Video and Film

63.   User-produced or –edited video content has taken three primary forms on the web: homemade content, such as home videos or short documentaries, remixes of pre-existing works, such as film trailer remixes, and hybrid forms that combine some form of self-produced video with pre-existing content. Examples include Chinese teenagers lip synching (see Figure 3). Another type of user-created video consists of splicing up portions of videos or movies and creating new versions, often perceived as mock 'trailers' for one or more of the movies involved. An example includes the various mash-up 'spoofs' (e.g. parody by imitation) surrounding the film Brokeback Mountain.[26] Popular videos may also spur on a wave of remixes. Creators may use this form of remixing as a kind of social, political, and cultural parody.

64.   Video content may be hosted on a user's website, traded on peer-to-peer networks, private webpages or hosted by video sharing platforms such as Google video, AOL Uncut, Guba, Grouper, Vpod and Sevenload in Europe, Dailymotion in France, MyVideo in Germany and, in Italy, Libero Video (see Annex Box 7 on China). Increasingly these sites are also enabled for access (upload and download) from mobile phones and devices. Stickam.com (live broadcasts from Web cameras) and LiveLeak (reality-based footage) are among the new forms of increasingly, unfiltered video services.

Figure 3. Example of famous lip-synching video

Source: YouTube

User-created content posted to advise on purchases, travel and other knowledge areas

65.   A rather big but heterogeneous category of UCC enabled by the participative web is when users and consumers post opinions and advice (called in 'word-of-mouth' sites in MIC, 2006), also referred to as information and knowledge commons. These take the form of Internet-based bulletin board where contributors can submit opinions and critiques, e.g. product reviews based on their experience. Other users, in turn, are able to use this information to make informed purchase decisions.[27] Companies can more easily find out what the consumers feel about their products.[28] Ideas for new products or modifications can be gathered (c.f. the concept of user-led innovation in van Hippel, 2005).

66.   But the topics discussed are not limited to product reviews. Overall, users use Internet platforms (e.g. blogs) to exchange or present knowledge or information concerning subject areas or day-to-day life, ranging from questions related to housing, health issues, computer problems, financial investing[29], travel advice over to hobbies.[30] Some sites also allow for questions to be asked which are then potentially answered by other Internet users (e.g. the Yahoo 'Ask a question' service). Many users find the Internet and such community sites a very useful source with highly targeted information / knowledge and significant personal touch.

UCC platforms

Blogs

67.   A blog is defined as a type of webpage usually displaying date-stamped entries in reverse chronological order (Gill, 2004; OECD, 2006b). It is updated at regular intervals and may consist of text, images, audio, video, or a combination. Blogs serve several purposes: an important one is delivering and/or sharing information. Installing blogging software – e.g. Movable Type, WordPress and Nucleus CMS – on a server is necessary to blog. However, blog hosting services (e.g. Blogger) make it easier by removing the technical burden of maintaining a hosting account and a software application. Often blogs are a launch pad for sharing of other UCC types, i.e. blogs typically refer to other blogs, music or discuss user-created videos. In 2007, video blogging is expected to grow very significantly.

68.   Some sources estimate that there were up to 200 million blogs in existence in 2006 (Blog Herald); the blog tracking site Technorati tracked 55 million blogs in December 2006 and estimates that number of blogs has doubled approximately every 6 months over the last two years.[31] An approximation of the language distribution shows that nearly 75% of all blogs are written in English, Japanese or Korean.[32] Blogging is also very popular in countries such as China, India, and Iran. The popularity of blogs in Asia is also buttressed by a recent Microsoft survey which shows that nearly half of all Asian Internet users have a blog, that young users are most prevalent (56% of all bloggers are under 25, while 35% are 25 to 34 years old, and 9% are 35 years old and over) and that women are very active (55% of bloggers in Asia were found to be female). Blogging is considered a form of expression and as a means to maintain and build social connections (74% find blogs by friends and family to be most interesting).[33]

Wikis and Other Text-Based Collaboration Formats

69.   A wiki is a website that allows users to add, remove, and otherwise edit and change content (usually text) collectively. Users can instantly change the content of the pages and format them with a very simple tagging language. Initial authors of articles allow other users to edit 'their' content. The fundamental idea behind wikis is that a vast number of users read and edit the content, thus potentially correcting mistakes.

70.   Various sites provide wiki hosting. Sometimes termed 'wiki farms', these sites enable users and communities to create their own wiki for various purposes. In addition, forms of collaborative writing have developed alongside wiki technology (e.g. Writely, owned by Google, and Writeboard).[34] One frequently cited example is the freely accessible online encyclopaedia Wikipedia. It comprises 4.6 million articles in over 200 languages (Wikipedia, 2006). Fifteen of these languages had over 50000 articles, with the highest being 1.3 million articles in English. The vast majority of edits emerge from a small percentage of users (Annex Table 14).

Group-Based Aggregation and social bookmarking

71.   This category of content is relatively new and consists primarily of group-based collection of links to articles and media and/or group based rating of such links, also referred to as new social content aggregators which build on opinions and knowledge of all web users. Users generally collect these links, tag them, rate them, and often times comment on the associated article or media. Sites such as Digg specialise in the use of this model, whereby users post news links to the site, and other users rate them by adding their vote to it.[35] Del.icio.us, a social bookmarking website, allows users to post links to their favourite articles, blogs, music, recipes, and more, and access them from any computer on the web.

Podcasting

72.   Podcasting is a phenomenon that has emerged out of the combination of the ease of audio production with technologies that allow for subscription and syndication. The publish/subscribe model of podcasting is a version of push technology, in that the information provider chooses which files to offer in a feed and the subscriber chooses among available feed channels. A consumer uses a type of software known as an aggregator, sometimes called a podcatcher or podcast receiver, to subscribe to and manage feeds. Well, known podcast softwares are FeedBruner, iPodderX, WinAmp, @Podder. Mobilcasting, i.e. receiving video and audio podcasts on mobile phones, is expected to develop fast.

73.   Podcasting technology is also used for content which does not come directly from users. Some surveys estimate that 6 million Americans have listened to podcasts (Raine and Madden, 2005). Popular download sites such as Apple iTunes hosted almost 83 000 podcasts in March 2006 (up from 8000 one year ago – see Annex Table 15 for the top categories).

Social Networking Sites

74.   Social networking sites (SNS) enable users to connect to friends and colleagues, to send mails and instant messages, to blog, to meet new people and to post personal profiles with information about them. Profiles can include photos, video, images, audio, and blogs. In 2006, MySpace has over 100 million users (although not all of these are active) and is now the most popular website in the United Sates according to Hitwise. Other popular SNS include Friendster, Orkut and Bebo. Facebook is a popular SNS on US college campuses with over 9 million users. Korean Cyworld is reported to have 18 million users in the country, or 40 percent of the population and 90% of Internet users in their twenties (Jung-a, 2006). Mixi, a SNS in Japan, has more than 4 million users.[36] Some video sharing sites such as Grouper are allowing to share videos privately, furthering the social network dimension of video sharing sites.

75.   Certain SNS sites are dedicated to particular topics, the sharing of knowledge, or even purchases of products and services. For instance, user-created content on the Internet is transforming how users research, search and decide on their travel plans. Yahoo's Trip Planner, Google's Co-Op, TripAdvisor's Inside, VirtualTourist's Trip Planner and others are online tools that lets vacationers share travel journals, itineraries and photos. Similar social networking tools are used for real estate purchases.

Virtual World Content

76.   Virtual world content is created in the context of an online game-like 3D digital environment to which users subscribe. Not all online multiplayer games allow for users to create their own content. Yet virtual environments such as provided by Second Life, Active Worlds, Entropia Universe, and Dotsoul Cyberpark provide users with a scripting language and integrated development environment with which they are able to build new objects (Mayer-Schoenberger and Crowley, 2005) while often permitted to keep the intellectual property rights to them (see Figure 4 for an exhibition in Second Life)[37] .

Figure 4.   Library of Congress exhibit in Second Life

Source: Flickr.com

77.   In January 2007, Second Life claimed over 880000 users in more than 90 countries which logged on in the last 60 days (and 2.5 million total residents).[38] Owning land in Second Life allows users to build, display, and store virtual creations, as well as host events and businesses or real university courses. Further, it has an economy based on so-called Linden Dollars where more than USD 130 million per year is contracted between players. Users make money while selling items created and land purchased earlier (e.g. clothes for avatars).

VALUE CHAINS AND EMERGING BUSINESS MODELS

78.   The next sections explain the emerging value chains and business models around user-created content and pinpoint the increasing number of entities involved.

The emerging value and publishing chain of user-created content

79.   As suggested in the definition section, UCC may often be a non-commercial phenomenon. The vast majority of user-created content is created without the expectation of profit or remuneration. Motivating factors include connecting with peers, achieving a certain level of fame, notoriety, or prestige, and the desire to express oneself. Defining a value-chain for UCC in the traditional, commercial sense as done in the case of other OECD studies of digital content sectors is thus more difficult. This analysis of business models and value chains is thus a snapshot of emerging approaches which has to be revisited.

80.   Here the value-chain and distribution model for UCC is contrasted to a simplified traditional and offline media publishing value chain (see Figure 5). This contrast mainly works for content such as text, music, movies and other similar media formats but is less applicable for content created in virtual worlds.

81.   From a creator's point of view, the traditional media publishing value chain is characterised with a number of hurdles, i.e. publication and distribution of ones content depend on various entities selecting and consenting to a creator's work. To produce and publish their work, an individual writing editorials has to be recruited by a newspaper, a musician has to sign a record deal, a poet has to find a book publisher and a film writer has to successfully submit his script to film studios.

Figure 5.   Traditional, offline media publishing value chain
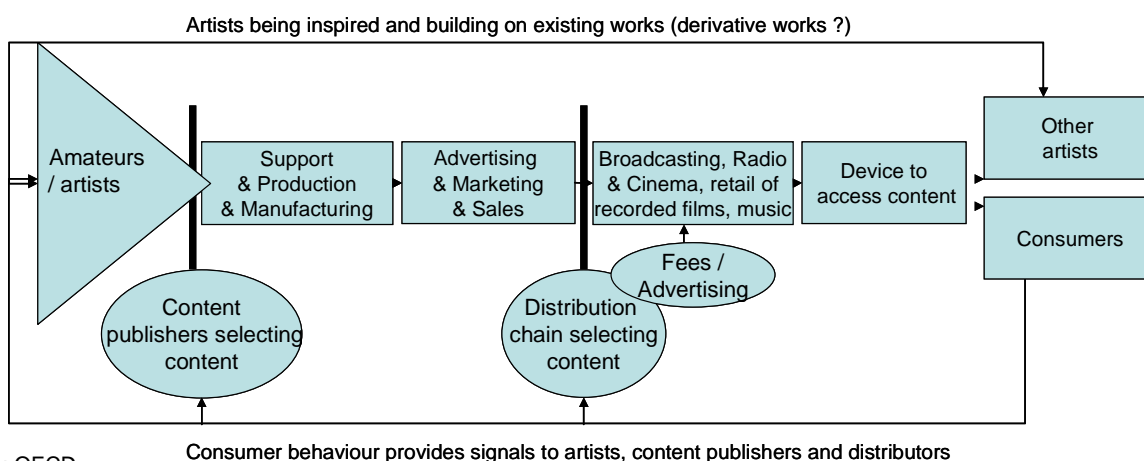
Source: OECD.

82.   The creation of the work to be published and its physical distribution can be expensive undertakings. The content publishers are rigorously involved in selecting content, supporting the creator in its production, manufacturing, advertising and in selecting the best distribution chain. A certain technical and content quality - although the latter is hard to define - is guaranteed through the choice of the traditional media 'gatekeepers'. Relative to the potential creative supply, only few available works make it through to airing on television, radio, being distributed on CD, etc.

83.   Consumers watch the content either on television, read the book, listen to the CD while often relying on certain media devices (e.g. a CD player). On television, for instance, the number of distribution channels may be limited. The content is either paid for directly by the consumer (i.e. purchase of the afore-mentioned media or subscriptions to, for example, cable TV) or is brought to the consumer on the basis of advertising-supported channels. The behaviour of customers and their preferences is feeding back into how content publisher, distributors and artists select future content. Finally, available works influence artists in the creation of new works, i.e. Jazz Players, playwrights, scriptwriters, singers being inspired by works of earlier artists.

84.   In contrast, Figure 6 depicts the value chain for user-created content. The content is provided on originally non-commercial terms by its creators, the latter potentially seeking recognition, fame or later financial reward. While UCC may rarely be a perfect substitute for traditional media content, it seems to create value for its viewers; as evidenced by the time spent by users downloading and watching (i.e. potentially high consumer surplus as content is generally available for free). Although the content itself may have been free, UCC creates strong demand for various commercial products such as devices, software, Internet access to create and consume the content.

85.   In the UCC value chain below users create content for or on UCC platforms while using devices (e.g. digital cameras, microphones), software (video editing tools), the UCC platforms themselves and an

22

Internet access provider to create and post content. As opposed to the traditional media publishing chain and its selectivity as to what content shall be published, here all users with access are able to create and publish their content widely. In some cases, users even have their personal blog which does not rely on an external UCC platform. A likely greater supply of creative content based on a greater number of active and published creators is available, potentially in a lower or greater diversity of technical and content quality, yet engaging viewers. Similarly to artists in the traditional media chain, users are also inspired and build on existing works – including from the traditional media.

Figure 6. Original Internet value chain for user-created content
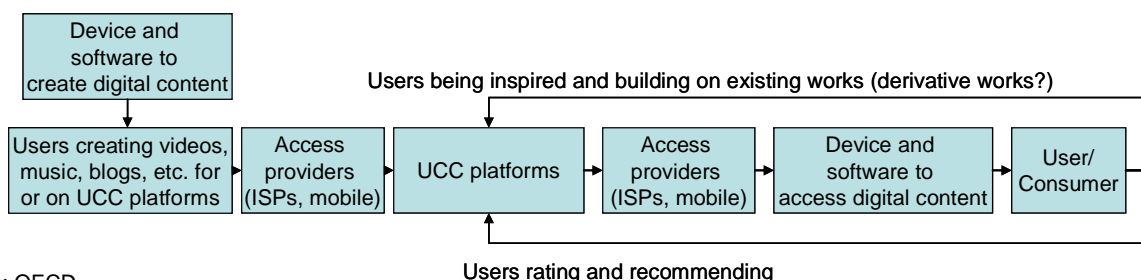
Source: OECD.

86. The selection of which content works and which content does not is done by the users themselves, namely through recommending and rating (i.e. another form of advertising), possibly leading some creators to fame and recognition which would not have been selected by traditional media publishers. The time it takes for content to be created and spread is greatly reduced as compared to the traditional media publishing chain. This may impact the type and quality of content.

87. Users access the content while downloading or streaming it from the UCC platform through their access provider and while using devices (e.g. notebook) and software (e.g. video streaming software).

Monetisation of user-created content and new business models

88. Commercial entities, including media companies, are playing an increasing role in supporting, searching, aggregating, filtering, hosting, and diffusing UCC. Direct revenue generation from this phenomenon for the creators of the content or for established commercial entities (e.g. media companies, platforms hosting UCC) are only starting to emerge. Until recently, sites hosting UCC where essentially non-commercial ventures of enthusiasts or start-ups with little or no revenues but with increasing finance from venture capitalists. These sites often did not have business plan showing how revenues or profits would be produced, some losing significant money day-on-day due to the high bandwidth costs. Rather their objective was to increase the user-base by appealing to ever-greater audiences and users, potentially with an eye to selling their business or starting to implement business models at a later stage.

89. Yet when projects reach a certain size considerable financial resources are necessary for the technology, bandwidth and organisation to keep it going. Also, given that many UCC platforms host unauthorised content from third parties, they face challenges with respect to remunerating the content originators.

90. UCC sites are also increasingly subject to business and investor interests. Mixi, the Japanese SNS site, for instance, and Open BC/Xing, a German business SNS site, have been listed on stock exchanges. Moreover, established media conglomerates but also Internet-based companies have been increasingly interested in deriving revenues from UCC sites. Firms such as Newscorp, Google, Sony and Yahoo have invested significant amounts of money to buy UCC sites (see Table 5).[39]

Table 5. Selected, recent acquisitions of UCC platforms

Date	Acquirer	Acquired	Type	Price in USD millions
Sept. 2005	Newscorp	MySpace	SNS	580
Oct. 2005	Viacom/MTV	iFilm	Video	49
Aug. 2006	Sony	Grouper	Video	65
Aug. 2006	Viacom/MTV	Atom Films	Games, films, animations	200
Sept. 2006	Yahoo	Jumpcut	Video editing	Undisclosed
Oct. 2006	Viacom/MTV	Quizilla.com	Text, quizzes, images	Undisclosed
Oct. 2006	Google	YouTube	Video	1580
Nov. 2006	Google	Jotspot	Wiki	Undisclosed

Source: Company information and press reports.

91.   These increasing sums being paid for acquiring UCC sites and the increased venture capital flowing into these areas have triggered renewed concerns about the build-up of a new Internet bubble. As in the late 90s, mainly, the size of the web site audience / 'user engagement' ('eyeballs', traffic and page views and click-throughs) are drawing the investors' attention. Again, earnings and revenues do not seem to be the prime concern. The large sums invested in buying up UCC start-ups is leading to concerns of second Internet bubble. While this cannot be excluded, in some respects the environment for these investments has changed with new possibilities associated with online advertising, new possibilities to deliver high-quality content through broadband, changed usage habits and increased ICT skills, etc. Furthermore, as mentioned before, the overall sum of venture capital flowing into such investments in 2006 is still relatively small, i.e. only about 40% of average investments between 1999 and 2001 in the US.

92.   Spurred by an increased interest in monetising UCC and related acquisitions, new models are developing on both the host- and creator-side of UCC. While the value chain (i.e. the entities and the activities to produce and diffuse the content) are largely unchanged to Figure 6, new models aim at the monetisation of this content. At the point when consumers access the UCC platform or a particular video, they donate, pay fees or subscribe to access the content or they are confronted with online advertising. New interactions between the UCC and the established media value chain are emerging as UCC platforms are screened for promising talent and content which are later aired or integrated in the traditional media publishing value chain (e.g. sometimes in existing cable or TV subscriptions that users may already subscribe to).

93.   New entities are thus involved in the provision and distribution of the content, mainly the advertisement industry, search engines, and media firms who own UCC platforms or who select content from them. When payments are involved financial service providers and the associated technologies enter the value chain. As increasingly there is a need for tools to find content (e.g. search engines adapted to music, video and other multimedia content and user ratings and recommendations), the role of search, portals and content aggregator of multimedia content is growing. Digital rights management or watermarking technologies may increasingly be used to assure that content is not accessed illegitimately.

94.   Different UCC types (e.g., blogs versus video content) have different albeit very similar approaches to monetising UCC. These models can be paired with approaches that remunerate the creators of content (discussed later in the section on economic impacts). Whereas the interest in monetising UCC is growing, most models are still in flux and few providers generate substantial revenues or profits.

95.   At this stage there are essentially five approaches to monetise UCC, a combination of which are illustrated by three concrete cases in Table 6.

Voluntary donations

96.   In a frequently utilised model, the user makes the content freely available, like that of a musician performing on the street, but would solicit donations from users. Such models are currently in place on many sites with a 'donate'-button, often encouraging those accessing the content to donate to the creator or the institutions (usually online by credit card or via PayPal). A significant number of blogs, wikis, online video, and online music creators ask for donations from their audience for activities such as web hosting and site maintenance, or for the content as such. A common feature of certain non-commercial UCC sites is that they manage to run their operations with quite limited funding (often mostly the time invested by volunteers and users). Wikipedia, for instance, spent less than USD 750000 in 2005 to sustain its growth and it frequently draws on donations to finance these costs (beyond the donation of time and expertise which are also donated by its users).[40] Blogging and citizen journalism sites such as Global Voices Online are supported by bloggers who commit their time but its operating expenses are funded by grants from foundations or even news companies (such as Reuters in the case of Global Voices Online). Such donations of time or money have been the cornerstone of Internet developments in areas such as the open source movement (e.g. for the support of free Internet browsers) or other user-driven innovations on the Internet. New voluntary payment models for the promotion of UCC content and platforms have which are based on reciprocity, peer-based reputation and recommendations have been proposed (Regner et al, 2006).

Charging viewers for services

97.   Sites may charge those viewing UCC, whereas the posting of content is free. This can take the form of a pay-per-item or a subscription model. The popularity of the UCC has to be high to be able to charge as competing sites are free and as making small online payments and entering credit card information may be too burdensome or impracticable.

98.   **Pay-per-item model:** In that scenario, users make per-item (micro)-payments to UCC platforms or to the creators themselves to access individual pieces of content. iSTockphot, for instance, offers photographs, illustrations and stock video from its user-generated stock for USD 5 each. Platforms exclusively hosting UCC or established digital content sale points (such as online music stores, video-on-demand platforms, or online retailers), for instance, could offer UCC as part of their repertoire on pay-per-item terms. The fact that no shelve space is needed to stock a variety of content facilitates this model.

99.   **Subscription model:** This model would entail consumers paying to subscribe to services offering UCC. Yet paying a subscription to access others' content is rarely used as model. Rather users pay a subscription for enhanced hosting and other services for one's own content and access to other's content. One of these models involves two-tiered subscription services, whereby a user may opt for a 'basic' account free of charge that provides a set amount of services or for a 'pro' account that users pay a subscription or other fee for. The 'pro' accounts provide enhanced features, more (or even unlimited) hosting space, and other options that are attractive to the user.[41] A new approach involves a hosting-based model with a cooperative element, such as Lulu.tv. Users pay for the service provided by the site, but are also remunerated on the basis of the popularity of their content (see later discussion on this point).

100.   The bundling of UCC into existing subscriptions and associated payments may be an easier option. Cable TV operators, Internet Service Providers (ISPs), digital radio services and other media outlets derive most of their revenue through monthly subscription fees paid by the users (e.g. Euro 29.99 for a monthly Internet triple play offer in France). To remain attractive to users, such operators could opt to carry UCC, either by creating special channels exclusively devoted to UCC (such as the case with FreeTV in France) or by airing a selection of UCC on the regular programs. In both cases, users pay for the UCC content via their usual ISP or cable subscription.

Table 6. Three business model cases: Blogs, photos and video

Citizen journalism: AgoraVox (France)	AgoraVox is a European site supporting 'citizen journalism' which is currently based on voluntary in-kind contributions. On a voluntary basis users submit information and news articles. The submitted content is moderated through the small AgoraVox staff and volunteers. Readers also feedback on the reliability of the information. Despite of its low-cost model, AgoraVox is aiming to generate revenues through online-advertising in the near future. Similar citizen journalism sites such as OhmyNews in Korea are remunerating their writers. OhmyNews redistributes advertising revenues to writers for very good articles. On OhmyNews readers also directly remunerate citizen journalists by giving them tips through a micro-payment system.
Photo: Flickr (US)	Flickr derives its revenues from advertising and subscriptions. A free account provides the possibility to host a certain number of photos. While searching or viewing photos advertising is being displayed. This revenue is not being shared with users. A 'pro' account for USD 24.95 can be subscribed to offering unlimited storage, upload, bandwidth, permanent archiving and an ad-free service. As Flickr is part of Yahoo! it also enhances membership and traffic to other Yahoo! sites. Similar photo sites such as KodakGallery are owned by firms in the photography business. Users can create free accounts. Revenues are being generated through the sales of value-added photo services (e.g. purchasing of prints).
Video: MyVideo (Germany)	The online video sharing site MyVideo derives its revenues mostly from advertising and from licensing its content to third parties. Recently, ProSiebenSat1 Media, Germany's largest commercial TV company, has bought a 30 per cent stake in MyVideo. The objective is to secure a share of Internet advertising, to cross-promote content (UCC content on TV, and TV content on UCC platforms) and to identify interesting content for traditional media publishing (e.g. Hit talent search show). Video sites such as YouTube have also started licensing content to telecommunication service providers.

Source: OECD based on company information and press reports.

Advertising-based models ('Monetising the audience via advertising')

101.   Advertising is often seen as a more likely source of revenue surrounding UCC and a significant driver for UCC. Models based on advertising enable users and hosts to preserve access that is free of charge to the content while bringing in revenue. The economics of such a service are often compared to free web mail where users get a free service, and owners of the service get to serve ads to this audience. Payment for the advertising depends on numerous factors: number of users on UCC sites, related web site usage (dwell time on site, depth of visit / page views per session / share of repeat visits), or clicks on the actual advertisement banner leading the user to the webpage of the brand being advertised. Viable sustainable business models are only likely to work with a large enough user base to attract enough advertisers and actions by users generating revenue flows for the site.

102.   Services that host UCC make use of advertising on the site (including banners, embedded video ads and branded channels or pages) to generate revenue. The advertisements can be specific to an audience most likely to be attracted by certain UCC platforms (often popular, young target groups) or to certain content being watched by the user. When users search or watch a particular video, related advertising is shown on the side bar, i.e. banners or short trailers start as the computer cursor moves across a banner.

103.   Many UCC platforms such as Fanfiction.Net are relying on services to drive advertisement revenues (e.g. Google AdSense, Microsoft, or the service provided by the UCC hosting site itself such as FeedBurner Ad Network for blogs). Google AdSense automatically delivers text and image ads that are targeted to the UCC site, the requested UCC content, the user's geographic location and other factors (for example, travel ads for China when searching for the keyword 'China" on a video site).[42] When users click on the ad, that advertisement service receives per-click revenues from the company being advertised. In turn, it then pays the UCC site hosting that is its ads. Some UCC sites are also redistributing part of this advertising money with those creating or owning the content. These models provide independent UCC sites (some owned by individuals) with access to a large base of advertisers.

104.   Advertising may also be placed within the content, such as within a video. Popular video podcasts also incorporate advertisements where users can click to sites from within the video. Increasingly, 'branded channels' have been launched on UCC platforms where users can view content from a special brand or media publisher. Virtual worlds like Calypso allow firms to create and display advertisement.[43]

105.   It is expected that sophisticated targeting techniques to create targeted ad messages, rather than the interruptive spots used by most sites. The quality of the targeted nature of the advertisement will depend on how well videos or UCC is paired with relevant advertisements. Currently, advertisements are often displayed on the basis of tags and keywords which uploaders create. These may be more or less reliable with some users not creating keywords or using wrong ones to attract more traffic.

106.   UCC platforms have already received substantial up-front revenues from third players wanting to advertise to this community. In August 2006, Google agreed to deliver at least USD 900 million in ad revenue over three and a half years to News Corp. for the right to broker advertising that appears on MySpace and some other sites (van Duyn and Waters, 2006). Microsoft Corp. also recently agreed to be the exclusive provider of advertising to Facebook (Sandoval, 2006a).

107.   Although most of the hopes to monetise UCC are currently being placed on purely advertising-related business models, it will take time to show whether these models will work. Advertisers are concerned that the user audience may have grown accustomed to free content and will migrate to ad-free sites. Also some advertisers are concerned to be randomly associated with UCC they cannot control or foresee (e.g. a car advertisement being shown before a UCC video about a car accident or other inappropriate content).

Licensing of content and technology to third parties

108.   Increasingly UCC is being considered for airing on other channels and this act of licensing content to third parties (e.g. television stations) may be a source of revenue. As elaborated on later, according to most terms of services of UCC sites, users agree that they have given the site a licence to use the content without payment; sometimes reserving the right to commercially exploit the work.[44] Sometimes this may include the right of the UCC site to license the content to third parties but a revenue sharing model between content creators and UCC site may apply. Increasingly deals to license content to third parties or to cooperate with third parties to share the content is involving mobile carriers (e.g. the recent Verizon and YouTube 'Watch on Mobile' service).

109.   Finally, UCC platforms can enter into commercial agreements with third parties to provide their technology to the latter (e.g. DailyMotion entering a commercial agreement with the French ISP Neuf Telecom to provide its video sharing service technology). Some UCC platforms (e.g. On2 Flix) are more back-end service providers to facilitate the process of UCC video services of third parties.

Selling goods and services to community ('Monetising the audience via online sales')

110.   Another option is to capitalise on the large, captive user base and market own or third party products to users. Due to the network effects, successful UCC sites are likely to have a large user base. This large audience can be monetised with UCC sites selling items or services directly to its users. Similarly to the above examples in the pay-per-item or the subscription section, blogging, photo sharing and other sites may sell particular one-off or continued services to their users. But UCC platforms such as virtual worlds or social networking services also allow them to sell the use of online games, avatars, virtual accessories or even virtual land to their users. Korean social networking site CyWorld, for instance, receives considerable revenues from the sale of digital items such as decorations for a user profile or

furniture for one's virtual 'miniroom'.[45] Users use Acorns as currency in the CyWorld Shop purchased via credit card.

111.   UCC sites can also cooperate with third parties to monetise their audience via allowing the latter to sell directly to their users while taking a share of the revenue. For instance, the Mypurchase service of MySpace will provide the interface for creators to sell their music, taking a portion of sales revenues in exchange. The popular Japanese social networking site Mixi has several approaches, one of which is to allow users to rate and review books CDs, DVDs, games, electronics and other items and linking users directly to the Amazon Japan with one click to purchase those items (calling this 'social commerce') or to listen to music which can later be bought over iTunes.

112.   UCC platforms could also allow for transactions amongst its users while taking a share of the revenue. Depending on the terms of service, other business models may involve the selling of anonymised information about users and their tastes and behaviour to market research and other firms.

ECONOMIC AND SOCIAL IMPACTS

113.   This section looks more closely at the economic and social impacts of UCC. The production and consumption of UCC has been accompanied by a number of promises and distinct and verifiable social and behavioural changes which are centred on a more participatory and active society. In principle, these impacts are likely to be only in their early stage with the longer-term impacts yet unclear. Also, they cannot be seen in isolation but invariably have or interrelate with economic impacts.

Economic impacts of user-created content

114.   Despite the non-commercial context, user-created content is already an important economic phenomenon with direct impact on various industries. UCC has actively and effectively contributed to the availability of broadband content. The spread of UCC and the amount of attention devoted to this area by users seems to be a significant disruptive force for how content is created, consumed and for the industries traditionally supplying content. This disruption creates economic opportunities and challenges which vary according to market participants and their strategies. Also, the trend towards monetisation of UCC is just starting and often figures on impacts directly attributable to the phenomenon are not available.

115.   The next section discusses the economic implications of UCC while showing how the business models invoked earlier and efforts to monetise UCC may affect various industry participants. At this early stage those economic impacts – especially in terms of GDP growth and employment - are hard or impossible to quantify.

116.   As reflected in Table 7, in the context of UCC different industry sectors and firms have very different rationales and economic impacts.[46] The specific business models and economic impacts on UCC platforms were discussed in the earlier section on value chains and emerging business models.

117.   While in the context of UCC, most press reports centre on the impact of UCC on traditional media firms, the more immediate impacts may be on users, and non-media firms. The more immediate positive impacts in terms of growth, market entry of new firms and employment are currently with ICT goods and services providers and newly forming UCC platforms which attract significant investment. Another set of firms particularly active in monetising UCC are search engines, portals, and aggregators

which are seeking to formulate business models surrounding search, aggregation and distribution of this content which is often based on online advertisement.

118.   Impacts are also starting to be felt by certain professional (free-lance) content producers such as journalists, photographers, and others who now compete with freely available web content.

Table 7.   Economic incentives along the value chain

Consumer electronics and ICT goods	Sell hardware with new functionality and interoperability allowing to create and access UCC.
Software producers	Establish ICT services and software as standard for the creation, hosting and delivery of UCC.
ISPs and web portals	Use digital content to attract customers to premium Internet services. Web portals are interested in building Internet audience to attract traffic and advertising revenues (and to avoid losing traffic to UCC-related sites).
UCC platforms and sites	Build Internet audience to attract traffic, subscription and advertising revenues and potentially to be bought by third parties.
Users & Creators	Either non-commercial incentives (such as desire to entertain or inform other users, or quest for recognition or fame) or desire to generate revenue through donations, the sale of content or advertisement-based models. Other users are profiting from free access to content which may be entertaining, educational or improve a number of choices (such as purchasing decisions, or advice on various topics).
Traditional media	Preventing UCC from decreasing revenues from other content and/or preventing disintermediation. Participating in the revenues being generated with UCC online (essentially through ad-based business models), reaching to the audience to promote own content, broadcasting or hosting UCC to retain audience and advertisers.
Professional content creators	Reinventing their business model in the face of a growing amount of free web content (e.g. photographs, images).
Search engines	Use audience and UCC to drive advertising revenues while improving searchability.
Web services that profit from UCC	Use UCC to build more attractive web site and customer services (e.g. travel agency or hotel chain lets users post pictures and share their experiences online).
Advertising	Participate in the increasing online advertising of products towards communities on UCC platforms. Use UCC content in advertising campaigns.
Marketing and brands	Increase customer loyalty through the promotion of brands on social networking sites or through advertisements to this community.

Source: OECD.

Consumer electronics, ICT hardware, software and services

119.   The consumer electronics industry, the telecommunications industry (including Internet service providers, ISPs and increasingly also mobile operators), firms creating the tools and software to edit and publish content and the information technology in general have benefited from UCC as users buy digital cameras, software, and broadband access to watch and create content. In addition, truly innovative and new products by new firms entering the market and creating employment surface.

120.   The ICT sector grew at 6% in 2006, with much higher growth expected in digital storage, new portable consumer products, Internet activities related to the participative web and new digital products (OECD, 2006b). In particular, the digital entertainment market is currently considered to be a high growth market, with the electronics industry seeing a growing global market for digital consumer appliances and a comeback in the last three years (CEA, 2006).[47] The detailed figures imply that users spend more on flash and hard-drives, portable MP3 audio players, digital cameras and related accessories. Technologies allowing for playback of popular web video content on TV, mobile phones, and other devices for true cross- platform applications will drive further growth of ICT products.

121.   As users are increasingly attracted to the Internet to create and download content, this is also an important driver for the communications industry (incl. mobile operators) and other infrastructure providers. The quest for greater speed, wireless and even mobile access is increasing profits and represents

a welcome opportunity to replace loss of traditional fixed-line voice revenues (OECD, 2006d). To move into more value-added services, telecom operators are also increasingly interested in hosting and making money with UCC. Vodafone, for instance, recently announced that it will try to unite virtual and real communication, allowing people to talk through their avatars without necessarily sharing their real personal details.

122.   The popularity of video sharing services has led to a new types of application service providers (so-called 'broadband video application service providers').[48] Industry observers estimate that YouTube is streaming 40 million videos and 200 terabytes of data per day.[49] Not too long ago, Firms such as Brightgroeve, Entriq, Maven Networks which had been unheard of not too long ago, offer publishing, syndication, commerce, content management, security and other platform components in the form of software-as-a-service. The market is forecasted to reach a turnover of USD 1.9 billion in 2011 (ABI Research, 2006). Firms such as Limelight Networks providing content delivery network to popular UCC sites report strong growth reaching USD 14 million of revenues in the second quarter of 2006.[50] Firms providing one-stop service of video upload, converting and transmission of optimized content while reducing bandwidth requirements will see large demand.

123.   Similarly, spending on tools, ICT services and software which enabled users to create, edit, locate, post and even monetise audio and video files (Apple garage, Grouper, Jumpcut, Ripple Share) and on video compression software is increasing. Firms which are producing new tools such as recommendation engines, or which allow to create playlists, blogs and podcasting are entering the market, attracting investments and increasing revenues. In Japan, for instance, the market for blogs is estimated to be about Yen 137.7 billion (USD 1.2 billion) in 2006 (MIC, 2006).[51] This includes tools to publish and host blogs, the blog software market and related advertisement expenditures. Furthermore, mobile phone applications which make it easier to share photos, videos with other users and networking sites (e.g. developed by Shozu.com) are also in demand. The demand for digital rights management, watermarking technologies and other software tools will also increase.

Users / Creators

124.   New models are also emerging which allow for a remuneration of the content creators (i.e. creators of original works) as, for example, surveys of younger age groups point to greater willingness to place ads at end of videos, to feature brands in the video and to derive revenues from their work.[52] A distinction must be made between models that garner revenue for the creators themselves and models which entail a revenue sharing between creator and host.

125.   Originally, the possibilities for users to derive profits directly and without intermediary from their works were limited. A cooperative-based model is one where the creators contribute money to the service, and then this revenue is redistributed among creators. A hybrid model, such as Lulu.tv, combines the cooperative method with shared ad-based revenues. Users pay for the service provided by the site, but then they are remunerated on the basis of the popularity of their content. There is also the possibility of flat-fee subscription services in which creators would be remunerated.

126.   New services have arisen which allow for unlimited uploading and exchange of various content and which are financed by monthly fees from subscribers or Internet Service Providers. The Digital Media Exchange (DMX) is such a model based on P2P technology and operated as a non-profit cooperative cooperation.[53] Beyond unlimited exchange it allows users to make derivative works from the content while being copyright compliant. DMX collects monthly fees from subscribers or their ISPs, and pays all the income to content suppliers.[54]

127.   Most revenues for creators are likely to come from revenue-sharing models between creator and host which again are based on advertising revenues discussed earlier. In the case of creator-based advertising, users would utilise advertising on, within, or surrounding the content they created. For example, bloggers may put Google AdSense advertisements on their site in order to obtain revenue. A lot of new companies and software tools are allowing for users to post content and be remunerated (e.g. Ripple Share). UCC platforms are usually involved in remunerating content creators. In Korea, Mgoon has introduced a website 'tag story' where users post their own content and share advertising profits generated by them with the company. Korean Shotech UCC site has started to share 30 to 40% of its advertising proceeds with UCC makers. Other upstarts such as Revver, Feedburner, Blip.tv and Panjea.com share at least 50% of their ad revenue with users who create their content.[55] It is expected that the quality of the UCC can be improved via remuneration of its creators.

128.   Also, professional and paying opportunities can arise for users engaging in the creation of content. For example, students in popular lip-synching videos were later hired to be in commercials. Remixers, bloggers or video podcasters have been hired by major music companies or major media companies.

129.   Turning to the users who consume the content, the latter benefit usually from free access to more diverse content which may be entertaining, educational or serve other purposes. Especially information and knowledge commons mentioned earlier can add significantly to the welfare and entertainment of citizens.

Traditional media

130.   The lasting impacts of the shift to Internet-based media – both in terms of challenges and opportunities - are only starting to affect content publishers and broadcasters. Moreover, the involvement of media publishers in the hosting and diffusion of UCC is at an early stage.

131.   At the outset, UCC may have been perceived as a challenge and competition to established media firms. First, these UCC sites often host unauthorised content from media publishers without consent and without remunerating the rightsholders (e.g. full clips of TV shows which fall outside of the UCC definition adopted here). Thus traditional media publishers have a legitimate conflict of interest with UCC platforms and potentially face negative revenue impacts due to illegitimate airing of their content.

132.   Second, users may create and watch UCC at the expense of other traditional media such as TV. This may be a source of concern, given that many of the traditional media are based on attracting large audiences generating advertising revenues to support the creation of content and to make profits. As opposed to traditional media products, UCC can sometimes be produced in very cheap ways while still drawing a large and captive audience. For instance, Rocketboom a popular three minute, daily video blog distributed via RSS is produced with a video camera, a laptop, some accessories, but no additional overhead, promotion or large bandwidth costs.

133.   Third, when users are referring to traditional media sources some are doing so more selectively, potentially contributing further to the loss of control of the established media. Most of the existing studies demonstrate that time spent on the Internet reduces the consumption of offline media (c.f. OECD, 2004a). Figure 7, for instance, demonstrates that in the United Kingdom the Internet use has led to a reduction of attention devoted to the radio, newspapers, and TV. This effect is particularly strong in the 15-24-age bracket, while they use the more traditional media of television and radio considerably less and their viewing is declining at a faster rate. The more established media of newspapers, magazines and radio were particularly affected by this change in media consumption.

134.   It needs to be kept in mind however, that these surveys refer to the Internet broadly as potential substitute for TV and not to UCC per se. In addition, media such as television channels are facing increasing competition from an ever greater number of television channels, newspapers, and from other new media (e.g. online games but also due to digital radio). Consequently, some of the concerns directed toward UCC may rather be a reaction to a new distribution medium and changing user habits which are new and potentially hard to control. Media firms that are used to the concept of 'broadcasting' the same content to large audiences (one-to-many) are adapting to the fact that today users may be in search for more targeted, interactive or personalised on-demand content. Content publishers will increasingly compete with many other entertainment forms (including UCC) for more fragmented audiences and advertising revenues.

Figure 7. Reduced consumption of offline media in the UK driven by Internet use (April 2006), % of respondents
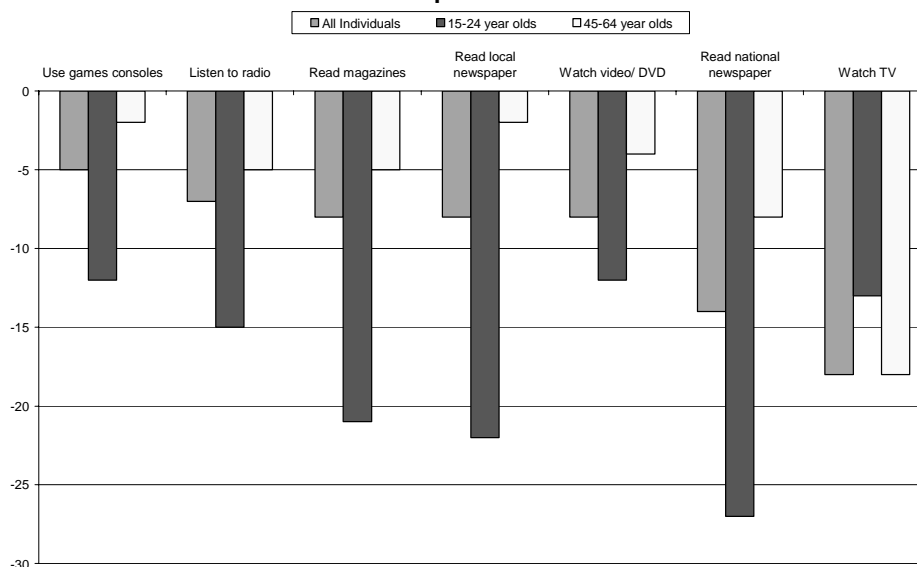
Source: Ofcom research, April 2006; Question: Since using the Internet for the first time, which if any of the following activities do you believe you undertake less?

135.   Increasingly seen as an opportunity or at least a market reality, however, UCC has already begun to have an impact on traditional media industries and vice versa. Progressively, the advent of UCC marks a shift among media organisations from creating on-line content to creating the facilities and framework for non-media professionals to publish in prominent places or at least to take existing UCC into account when publishing their own media product. For a start, traditional media make their own websites and services more interactive by providing the ability for users to comment, provide feedback, rate particular articles and content and diffuse their content via participative web technologies such as RSS feeds, podcasts or host blogs on their sites.

136.   Newspapers and other print media - which will be discussed in greater detail in the *OECD study on Online News Distribution* - have started to change their way of reporting or commenting on the news and – in some cases - to aggregate UCC, e.g. with discussion fora, interactive blogs and other interactive features ('citizen journalists').[56]

137.   Media companies such as television also increasingly select UCC for use on their usual channels or web pages; a trend which will be facilitated by technology allowing for viewing broadband content on television. For example, in France TF1 has launched the WAT site which allows users to upload content for later potential diffusion over television against remuneration (see also M6 Web in France). And CBS Television in the US is cooperating with You.Tube to select and air best viewer-videos on the network.

There is also an increasing number of TV channels being created to show only UCC (e.g. Current TV or see Figure 8 where Korean terrestrial broadcasters use UCC while also allowing users to post comments). Sony will introduce televisions which can access Internet video content (i.e. Bravia Internet Video Link) including user-created videos from Grouper. Narrowcasting content to target a specific audience or topic (Election TV and The People Choose 2006, or specialty interest content aggregators like Pet Video) is also developing.

Figure 8. Korean broadcasting of UCC while allowing other users to post comments

Source: www.afreeca.com.

138.   Major media companies also have acquired or are in the process of acquiring content from or licensing content to UCC platforms to participate in the revenue being generated and to exploit cross-promotion opportunities and ways of extending their on-air programs and brands to UCC platforms. In some recent deals, considerable amounts have been paid up-front by video-sharing platforms to media firms to be able to continue to host their content. Under these agreements, video sharing sites are offering free and full access to music videos (e.g. Vivendi Universal) or television content (from CBS, NBC Universal) - sometimes sharing related advertising revenue with the content owners, sometimes only relying on the promotional effects. Increasingly, traditional media firms have opted for the advertisement of their content within UCC sites, by giving access to trailers, free samples of certain content, etc.

139.   The impact of the increasing involvement of traditional media or established Internet firms in UCC sites is unclear. On the one hand, the latter provide the necessary 'backbone' to UCC platforms and potentially remuneration to creators. On the other hand, users may migrate away from UCC platforms which have too much centralised control, too many obtrusive advertisements and forms of branding, or which develop into video delivery platforms for commercial content producers while 'crowding out' UCC.

Professional content creators

140.   The impact of UCC on independent or syndicated content producers which previously did not face competition from Internet users or non-professional individuals is increasingly a discussion topic on blogs and other fora. Photographers (including independent agencies), graphic designers, free-lance journalists and other such professional categories who make their living on the basis of providing pictures, news videos, articles or other content face the competition from freely provided or low-cost UCC or other amateur-created content. In terms of photos and images, for instance, the web offers a vast amount of copyright-free content (see earlier examples of Flickr, iSTockphot or how user-created blogs and videos supplant editorial content in newspapers or online media ventures) which has decreased the unit costs of

images licensed for profit. In terms of video footage and news articles, citizen journalists are – in some way – also competing directly with freelance and other journalists for the reader's attention.

141.   Overall, it is too early to be able to quantify this impact on growth and employment for professional content producers. On the one hand, this may inevitably have an impact on the suppliers of such professional content which will have to readjust, some no longer able to make a living from their original work. In the case of agencies for photography and images these seem to be increasingly concentrated into a few providers (e.g. Getty Images, Corbis, Jupiter Images). On the other hand, cheaper or free access to such content also works to reduce costs for business and consumers.

Search engines and advertising

142.   Search engines and advertisers see the potential in capitalising on the user base of UCC sites. Worldwide growth of online ads was expected to be around 35 per cent in 2006 to reach USD 11.6 billion (van Duyn, 2006, see also forthcoming *OECD Online Advertising Study*). While still small, it is expected that over the next several years advertisement-supported UCC will be one of the main drivers of Website revenue (eMarketer, 2006a,b). This trend has been supported by the recent acquisition of You.Tube by Google. Other search engines such as the one by SK Telecom which also owns the popular CyWorld are also planning on developing a search engine that combines search and UCC.[57]

Services that capitalise on UCC

143.   Commercial web sites and services are emerging that allow users to contribute their content which increases the overall interactivity and customer value of the site. Increasingly travel services (e.g. hotel web sites, flight booking sites), real estate services and other websites allow for users to share their experiences (i.e. 'word of mouth'), pictures and ratings.

Marketing and brands

144.   On social networking sites, brands increasingly create special sub-sites and areas with social branding. Members of these sites may join brand groups and display logos on their personal profiles. Finally, advertisements can take a different form in virtual worlds. Second Life, for instance, has had news companies such as Wired magazine, CNET, Reuters and other firms such as Adidas, Toyoda buy virtual land (in this case advertisement space), to hold press conferences and to advertise their brand (Figure 9). Another form of branding and advertising takes place when artists use UCC sites to build prominence and eventually the attention of record labels, film studios, newspapers and the like.

Figure 9.   Reuters in Second Life

Source: Second Life

145.   Brands have also begun experimenting with new ways to integrate UCC into their advertisement. For example, when a video portraying the explosive combination of Mentos and Diet Coke spread on the video-sharing site Revver, Mentos responded by placing advertising within the video. Another initiative by a US car maker or by a beauty product[58] encouraged users to create their own commercials. Other firms have created sites on which users can create funny content.[59] There is, however, no way to control what users will do on such sites, with brands losing control of their message and being subject to greater information exchange between users potentially revealing flaws in products and bad service (i.e. sometimes justified but sometimes not).

146.   Market research is also using UCC to gather and use the information exchanged between users on the Internet – for example on brand reputation to customer service and product performance - to improve customer service, marketing campaigns, the brand image and the products themselves, e.g. Nielsen BuzzMetrics which provides technology to help companies understand and use the increasing consumer activity and content on the Internet.

Use of UCC and participative web tools in companies

147.   While this study is concerned with UCC only, tools associated with the participative web are increasingly used in professional enterprises. Blogs, wikis, podcasting, tagging technologies, and lessons of community and social networking sites are seen as important tools to improve the efficiency of knowledge worker collaboration. Once this trend is confirmed significant markets for participative web technologies and potential productivity impacts will result.

Social impacts of user-created content

148.   Despite growing economic impacts of UCC, at the outset, the creation of content by users is often perceived as a social phenomenon with social implications.

149.   On the side of opportunities, the changes in the way users produce, distribute, access and re-use information, knowledge and entertainment potentially leading to three cross-sectional trends: increased user autonomy; increased participation, and increased diversity. The Internet and UCC also lead to a change concerning the nature of communication ('who communicates with whom under what conditions and who's discretion' (Benkler, 2006) and related social relationships. These opportunities are likely to have structural impacts on the cultural, social, political sphere and economics, respectively. On the side of challenges, the topics of inclusion, cultural fragmentation and issues related to security, privacy and content quality have been raised.

Changed information production leading to increased user autonomy, participation and communication

150.   The rise of UCC produces new opportunities for how information, knowledge and culture is made and exchanged, potentially at lower cost (MIC, 2006; Benkler, 2006). The Internet being a new outlet for creativity, has altered the nature and the economics of information production as the entry barriers for content creation have significantly declined or vanished and led to the democratisation of media production (sometimes referred to as the 'rise or return of amateurs'). Changes include lower entry barriers, lower distribution costs, lower costs to users, greater diversity of works with shelf space in the digital media being almost limitless.

151.   These changes imply a shift away from simple passive consumption of broadcasting and other mass distribution models ('couch potatoes') to more active choosing, interacting and actually creating of content (Lessig, 2004) and a shift to a participatory 'culture'. Technological change empowers individuals to 'tell their stories', to produce cultural goods such as music and to transform the information and media

content environment surrounding them (Benkler, 2006, OECD, 2006a, Fisher, 2004, 2006). Users may derive a higher value from this content consumption as the content may be more personalised as users have a greater control over this on-demand content.

152.   Furthermore, the changed structure of communication and resulting active relationships built around exchange are argued to have a vital and important impact on how citizens and users communicate and express, and possible positive impacts on social ties.

Cultural impacts

The cultural impacts of this social phenomenon seem far-reaching with creativity at different levels being affected by new and different ways of creating and diffusing content and new interactions between creators, users and consumers (OECD, 2006a). According to the long tail principle, a more diverse set of cultural content will now find a niche audience, a substantial increase in the availability of content and culture to users, and potentially produce a vibrant range of creativity. A number of artists have already gained prominence while using UCC platforms to gain recognition.[60] This phenomenon applies to all genres. In Korea, for instance, one portal alone had over 150 000 literature related forums were classic and novel genres were created and commented by amateur critics (National Internet Development Agency of Korea, 2006). Talent agencies, media publishers and Internet sites now use UCC platforms to discover new talent (screenwriters, directors, musicians).[61] Even if the platforms lead to the recognition and development of only a few outstanding content creators, this may be considered a significant cultural enrichment.

153.   With quite dynamic user bases in most OECD and many non-OECD member countries, the availability and diversity of (local) content in diverse languages is on the increase. As more participate in the process of building and cultivating culture and possibly democracy surrounding them, greater identification of users with culture and society and less alienation may result (Benkler, 2006; Fisher, 2006).

Citizenship engagement and politics

154.   The Internet can be seen as an open platform enriching the diversity of opinions, various political and societal debates, the free flow of information and the freedom of expression. UCC is in many ways a form of personal expression and free speech. As such, it may be used for critical, political, and social ends. It has also been argued that the 'democratisation of access to media outlets' fulfils an increasingly important role for democracy, individual freedom, political discourse, and justice (Balkin, 2004; Fisher, 2004; Lessig, 2004; Benkler, 2006). As users raise questions, inquire, and as new decentralised approaches to content creation are being taken up, the political debate, transparency and also certain 'watchdog' functions may be enhanced on their way to a more critical and self-reflective culture (c.f. web sites like Meetup and Pledgebank which facilitate collective action on political and social matters by civil society).

155.   Citizen journalism, for instance, allows users to influence or create news, potentially on similar terms as newspapers, companies or other major entities (see forthcoming *OECD study on Online News Distribution*). Creators of UCC have succeeded in bringing attention to issues that may not otherwise have received notoriety (e.g. the online circulation of video files about politicians making racist remarks). Bloggers and other users on sites such as AgoraVox – see Figure 10 - have undertaken the role of grassroots reporters and fact-checkers that influences the content treated in traditional media (Gill, 2005). Effects may include a greater call for accuracy within the mainstream media, as users point out inaccuracies and flaws online. UCC may also provide a way to gain the attention of particular players when none previously existed (for example, protest movies against particular events or to inform about global warming). In some cases issues are covered in great detail which would not otherwise (e.g. a blog that specializes in human rights issues in country x or a media reporting on alleged wrongdoings of influential persons or companies). GlobalVoices.com, for instance, aims to redress inequities in media

attention by leveraging weblogs, wikis, podcasts, tags, aggregators and online chats - to call attention to conversations and points of views from non-English speaking communities. Often when unexpected events occur, the only source of immediate documentation may be users with their mobile phone cameras.

Figure 10.   AgoraVox
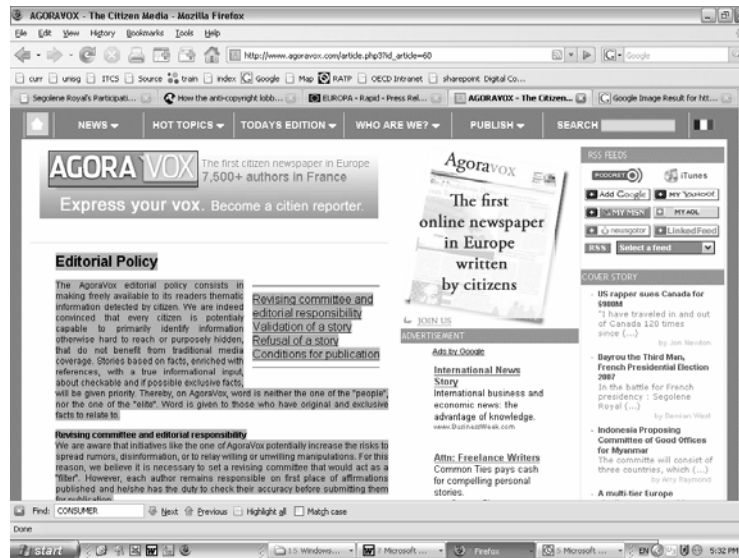
Source: www.agoravox.com

156.   Impacts of UCC are indeed strong for politics and have not gone unnoticed by politicians (see Box 2). On the one hand, blogs, social networking sites, and even virtual worlds can be platforms for exchanging political views, provoking debate and sharing of knowledge about societal questions at stake. They can also be very directly implicated in the political process itself and create awareness. In the last months for instance, popular social networks have covered political campaigns, urged young users to vote and have staged related debates. In the United States, these platforms have been active in getting youth to register to vote or possibilities such as video contests to provide thoughts on national policy (e.g. the 'MyState of the Union' initiative by MySpace). Social networking and other UCC sites are an increasingly recognised tool to engage the electorate as evidenced by the discussions but also by the increased presence of politicians on sites hosting UCC. In Korea, as of January 2006, 60% of all lawmakers have blogged (National Internet Development Agency of Korea, 2006). The medium- to long-term impacts of the participative web on political systems will merit ongoing study.

Box 2. Politics, news and blogging in France

In France, blogging has become a staple for politicians. Indeed, leading contenders for the 2007 presidential election including Segolène Royale[62] and Nicolas Sarkozy[63] have maintained such online journals. Further, Sarkozy's appearance in a video podcast in December 2005,[64] the first of a politician of his stature in France, was seen by many as a major stepping stone in embracing new forms of media. Socialist candidate Segolène Royal made her Web site, blogs, video podcasts and even virtual town hall meetings in a building on Second Life a vital part of her a campaign, practicing what she calls 'participative democracy'. Other prominent uses include blogging for activist and political ends, such as critiquing gender roles in advertising, debating the rejection of the European Constitution, or commenting on the country's labour laws. French newspapers such as Le Monde, have also put forth a blogging service where users may maintain online journals on the newspaper's website.

Source: MediaMetrie and various press reports (including Crampton, 2006 and Matlack, 2005a,b).

Educational and informative impact

157.   UCC which harnesses the collective intelligence of all users and to which users often contribute for free are potentially influential mechanisms to provide citizens, students and consumers with information and knowledge. Unlike some of the existing educational content, the user-created variety tends to be collaborative and encourage sharing and peer-production of content, ideas, opinions and knowledge. Provided the information is accurate, the availability of large amounts of freely accessible information, such as Wikipedia, Creative Commons materials, freely available pictures on photo-sharing sites but also websites created by individuals (e.g. a former teacher providing a website on American history, a naval officer authoring a podcasts on different ships) can have positive educational impacts. Discussion fora on various topics but also product reviews increase the general level of knowledge and potentially lead to more informed user and consumer decisions (e.g. . Amazon's book recommendations).

158.   Often educational projects can also build on participative web technologies such as podcasts to improve the quality and reach of education. Schools and universities may make use of the wikis for assignments, group projects, posting notes and syllabi, and creating online resources. The Harvard Extension School and other students and universities, for example, are using UCC platforms such as virtual worlds to teach facilitate projects (Figure 11).[65] Students and educators around the world (including in developing countries) access resources and knowledge mostly free of charge.

Figure 11.   Harvard law virtual distance education classroom
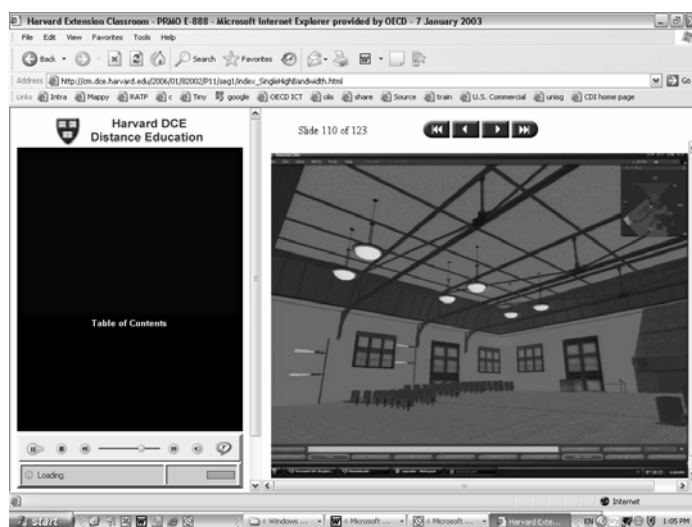
Note: See also Second Life's educational platform at http://secondlife.com/education.

159.   While accuracy and quality of information is assured in above institutional contexts, it may, however, be a problem in Internet-based settings where everybody can contribute without detailed checks and balances (see later sections for this discussion). Wrong facts or mistakes (such as, for example, wrong historical dates) can easily be perpetrated by the Internet. Even discussion fora and product reviews can spread misleading or false information.

Impact on ICT and other skills

160.   The creation and the engagement with UCC are likely to improve ICT skills, especially in younger generations who will need these advanced skills later. Furthermore, the actual process of creating content and viewing them, may create specialised or creative skills such as video editing and shooting, acting, interesting writing (e.g., novels, poems). Engagement with blogs, citizen journalism, critical videos related to public events or politics and the confrontation with various opinions may arouse a critical mind and interest in debate and specific topics.

Social and legal challenges of user-created content

161.   The Internet and UCC may also pose certain social challenges. A greater disconnect between digitally literate users and others (elderly and/or poor people) who are excluded from it may occur (i.e. social fragmentation, intergenerational gaps). Cultural fragmentation may also occur as different citizens may not share a common core/set of shared cultural content anymore as UCC leads to greater individualization of the cultural environment which might be in tension with the goal of a common core of shared cultural content, i.e. exacerbating the already existing trend towards the multiplicity of media channels and the diminishing societal role of a few national broadcasting channels for political discourse and national unity.[66]

162.   In terms of legal challenges, the nature of the Internet and the ease with which content on the Internet can be reproduced and distributed makes online UCC, all online content, particularly susceptible to copyright infringement. Other challenges relate to information accuracy and content quality (including the problem of inappropriate or illegal content), privacy issues, safety on the Internet and possibly adverse impacts of intensive Internet use which may pose challenges. These challenge are discussed in the policy section of this study.

OPPORTUNITIES AND CHALLENGES FOR USERS, BUSINESS AND POLICY

163.   Available statistics show that UCC has developed fast in recent years. As broadband penetration is growing in OECD economies, penetration in the developing world is still relatively low and likely to increase in the coming years. Moreover, as younger, more technologically savvy generations grow older, UCC is poised to grow throughout the different age brackets. However the rise of a participative web and UCC in particular raise opportunities and challenges for users, businesses and governments which are the topic of this last section.

164.   Based on previous analysis in the field of digital content, the OECD has developed a Digital Content Policy Cluster (see Box 3). Here we focus on areas which are most relevant to UCC and also raise issues which hitherto were not included by the said cluster. Questions have been raised on how sustainable the phenomenon of UCC really is? Are there bottlenecks to its creation and diffusion? What are problems raised by UCC? Finally: Should one go about removing these impediments? If so, how?

165.   The starting point for this section is the potential behind UCC and the question how to foster economic, social, and cultural benefits while defining the boundaries of legitimate use and creating a safe Internet environment. This analysis is backed up by a review of the terms of service of a spectrum of 15 commonly used English-speaking commercial UCC platforms.[67] This analysis is indicative of the legal and

policy setting of the most popular ways UCC is hosted. Yet users can also use non-commercial platforms or host their content themselves (such as a blog on one's own webpage for example). In these cases the here-analysed terms of services do not necessarily apply.

Box 3. Digital content policies

1. Enhancing R&D, innovation and technology in content, networks, software and new technologies.

2. Developing a competitive, non-discriminatory framework environment (i.e. value chain and business model issues).

3. Enhancing the infrastructure (*e.g.* technology for digital content delivery, standards and interoperability).

4. Business and regulatory environments that balance the interests of suppliers and users, in areas such as the protection of intellectual property rights and digital rights management without disadvantaging innovative e-business models.

5. Governments as producers and users of content (*e.g.* commercial re-use of public sector information); and

6. Conceptualisation, classification and measurement issues.

Source: OECD (2006c), 'Digital Broadband Content Strategies and Policies', www.oecd.org/dataoecd/54/36/36854975.pdf.

Enhancing R&D, innovation and technology in content, networks, software and new technologies

R&D and innovation

166.   The creation of user-created content relies heavily on the availability of various new participative web technologies, for example tagging, group rating, content distribution (content packaging and management; digital asset management), interactive web applications and content management systems, 3D graphic production and digital animation (see earlier section on drivers of UCC). Innovations on the network and on the consumer electronics side are also in demand. Often technologies will also be the solution to many business and policy challenges such as combating spam, ensuring a safe Internet experience (implementing parental controls, age ratings), and securing intellectual property rights. These technologies for content creation and diffusion are increasingly R&D-intensive (faster networks, new platforms, content-intensive products, data-base management) and the challenge is to establish business settings, policies and approaches that encourage innovation.

167.   Market participants and institutions create and commercialise innovative products, but governments are supporting relevant basic R&D and address market failures and provide an environment conducive to R&D and innovation (e.g. with R&D tax incentives, specific R&D support, etc.) and usually encourage linkages between commercial and not-for-profit R&D and innovation-related activities.[68] Basic R&D receives major public sector support, e.g. for military and space, and a lot of this is about software for virtual environments, 3-D modelling etc. To the extent that there are general market failures in the development of new software or platforms governments should ensure that an innovative business environment is maintained, without becoming explicitly involved in choosing particular commercial or non-commercial developments.

Ensuring technological and other spillovers

168.   Content delivery technologies and the content itself are increasingly relevant to non-entertainment sectors. Technological spillovers from UCC to other sectors are desirable, especially in areas such games imaging and virtual world technology which can be of relevance to medical and other fields.

Creative environments, skills, training, education

169.   The creation of UCC and the necessary services and technology to support their evolution rests on the existence of creative environments, skills and education. A central question is if and how governments shall encourage and promote UCC and if there are new models to foster creativity and reward.

170.   Governments have a role in influencing skills via scholastic and vocational training. For the creation of UCC, basic and sometimes more advanced ICT skills are needed. Younger generations will automatically have these required ICT skills. But the inclusion of older generations or the disabled may warrant special efforts.

Fostering user-created content as local and diverse content

171.   Culture and language issues are seen as important in the development of digital content, particularly for small countries and cultural minorities. There is significant government support for local content development where market failures are perceived to exist.

172.   Many OECD member countries have vibrant markets for the creation of UCC and related non-commercial and commercial services. The creation of UCC usually boosts the availability and diversity of local content in diverse languages. With lower entry barriers downstream and increased demand for content and lowered entry barriers upstream, the creation of content and overall cultural wealth could be positively influenced and the identification of artists facilitated.[69]

173.   Public institutions may have a role in driving the creation of UCC. In some countries, such as the United Kingdom, for example, public broadcasters have established initiatives which allow citizens to download their content, and rip, mix, and burn it (see the example of the British Broadcasting Corporation, BBC).[70] Other means to foster this phenomenon may exist in the context of cultural policies and institutions. Museums, musical conservatories, other cultural institutions but also schools with the increasing express public policy objective to foster creativity and cultural expression may innovate around the UCC phenomenon. Support programmes for the creation and diffusion of local content may have to be revised to take account of the potential behind UCC and associated outlets.

174.   In the United Kingdom, the making available of free content for downloading, remixing and other uses has however also triggered concerns around the idea that freely provided public content could 'crowd out' the creation of commercial content (i.e. free public content competing on unequal footing with commercial content).

Developing a competitive, non-discriminatory framework

175.   User-created content is based on the assumption of widely-accessible access to networks, software, content and other services. Increasingly commercial players are involved in supporting the creation, search, aggregation, filtering, hosting and diffusion of UCC.

176.   As a result, policy-makers will be interested in maintaining and developing further competitive, non-discriminatory framework environments, creating a pro-innovation business environment that promotes experimentation and competition in value chains and business models. This starts with the market for telecommunication services but also extends to other players which increasingly are active in this field (e.g. traditional and new content industry entities, Internet portals, search engines). Control over parts of the value chain should not unduly restrict new entrants or users creating content (in particular for small firm). This holds particularly true in new fields such as digital rights management, an increasing

concentration in search services, and technologies/services which prevent interoperability. Very strong network effects, potential for lock-in and high switching costs have to be taken into account when making competition-related assessments of UCC services which have a critical mass of users.

177.   It needs to be kept in mind however that, in principle, new forms of digital content innovations seem less based on traditional scale advantages and large up-front investments but more based on decentralized creativity, organizational innovation and new value models behind content production and diffusion (OECD, 2006a). These factors favour new entrants, particularly for new platform aggregation models, where content owners had no legacy advantages (IBM, 2007). Very popular services were started by a small group of individuals and rapidly competed with web presences of established entities.

178.   Still, maintaining the open nature of the Internet and sustaining the 'innovation at the edges' seems a necessary condition for the further evolution of UCC. The question is whether the Internet will preserve its open nature with interoperable services or whether it may evolve into 'walled gardens' which may be preferred by some users for simplicity, quality and security. The role of policies is to ensure that the consumers can choose and are not limited to only a 'walled garden' option. Finally, the growth and development of UCC may have to be taken into account when determining policy on the prioritisation of network traffic. It is unlikely that individual users creating content on an informal basis would have the ability or funds to negotiate agreements with ISPs.

Enhancing the infrastructure

Broadband access

179.   Universal, affordable access for broadband technology – a necessary condition for UCC - is a policy target in many OECD countries. Ensuring effective competition and continued liberalisation in infrastructure, network services and applications in the face of convergence across different technological platforms that supply broadband services should remain a key policy priority.[71] Broadband policies to ensure (regional) coverage and access to infrastructure and applications across all levels of society promoting access on fair terms and at competitive prices to all communities, irrespective of location, are being pursued. A regulatory environment which is promoting investment in communication networks and technologies and related competition and which adapts to new technologies such as next generation networks is desirable.[72] Initiatives such as the provision of municipal broadband networks can – in the absence of market solutions providing a similar degree of access - be beneficial to the creation of UCC (including the accessibility of broadband services to the disabled).

180.   One key technical problem for the evolution of UCC is the absence of symmetrical networks. Most contemporary Internet connections such as asymmetric Digital Subscriber Line (aDSL) are 'asymmetric' in nature as they provide high download speeds but rather low upload speeds.[73] As today there is greater potential for symmetrical exchange of content and related commercial opportunities the current infrastructure may not be conducive to such one-to-one relationships. The deployment of new distribution technologies such as fibre (as in Japan and Korea) can help overcome this problem.

Convergence as challenge for regulation

181.   Many related new services (so called non-linear services) have come up which support the diffusion of these videos on an on-demand and one-to-one basis. Companies such as ISPs, new video services and others are now involved in the creation, hosting and diffusion of such content. This technological and business convergence is putting existing regulatory arrangements and the traditional separation between broadcasting and telecommunications regulations to a test (OECD, 2004b; OECD,

2006e). Whereas telecommunication regulations mainly focus on establishing competition, broadcasting policy tries to achieve certain public policy objectives (e.g. the protection of minors, cultural diversity).

182.   Many OECD member countries are in the process of realigning their regulatory regimes to deal with convergence in light of the disparities that have arisen as Internet content has proliferated.[74] The essential question, while taking into account the particular nature of the on-demand video services, is to determine up to what point the new services should be subjected to similar rules as those applicable to traditional broadcasters or rules inspired by those.[75] Examples of such regulations are broadcasting and production quotas (e.g. transmission time reserved for works of independent producers), rules on television advertising and sponsorship (e.g. maximum advertisement time per daily transmission tie, identification of advertising, rules on surreptitious advertising, restrictions on certain advertisements such as alcohol and product placement and sponsoring), the protection of minors, rules on incitement to hatred, the right of reply (i.e. a person whose legitimate interests have been damaged by an assertion of incorrect facts in a television program must have a right of reply), and how events of major importance for society have to be treated.

183.   With the emergence of increasingly advertisement-based business models and unsolicited email and marketing messages, rules on advertising will play a particular role in the UCC environment (in particular product placement in virtual worlds, and in the context of advertising to children).

184.   A question which has also been raised is if and how UCC types and platforms can fulfil, extend or complement certain functions more effectively which up to now have been attributed to public broadcasting (public debate, social cohesion etc.).

Regulatory environment

185.   UCC raises certain questions with respect to the business and regulatory environment in which this content is created. Throughout a broader question arises: As users are increasingly involved in deriving non-pecuniary and pecuniary benefits from the creation of content, the treatment of these individuals or groups of persons in the face of many applicable legislations may be in question as they evolve from being consumers to actual producers / commercial entities (e.g. in the area of consumer protection, intellectual property rights and taxation).

Intellectual property rights and user-created content

186.   Copyright law is intended to encourage the creation and dissemination of works of authorship (i.e. published and unpublished literary, scientific and artistic works) and thereby to promote cultural and economic development.[76]

187.   For a work to enjoy copyright protection, it must be an original creative expression of the author.[77] Copyrights confer to the rights owner a set of exclusive rights, i.e. the control over reproductions, the preparation of derivative works (i.e. adaptations), distributions to the public, public performances and public display. The moral rights of the author (i.e. ability of authors to control the eventual fate of their works) are also an integral part of the copyright system.[78] The economic exploitation rights expire when the copyright term ends and the works fall into the public domain. Moral rights may continue even after the economic rights have expired (for instance, in France). During the copyright term users or creators interested in copying, adapting, or performing a work have to negotiate with copyright owners for permission. These rights expire when the copyright term ends and the works fall into the public domain.

188.   A balance is being maintained between exclusive rights and the public interest in accessing such works. Copyright systems in OECD countries contain a number of statutory exceptions and limitations to

the rightholders' rights (e.g. fair use principles). Under certain circumstances, these permit the unauthorized reproduction and adaptation of copyrighted expressions. Both the exclusive rights but also the exceptions and limitations have been adapted to the new digital environment, notably through the ratification of the WIPO Internet Treaties[79] (see WIPO, 2003 and OECD, 2005b).

189.   The role of copyright in the field of UCC is significant for various reasons discussed in this section. Rather than providing a detailed legal treatise of copyright history and current development, this section highlights the salient intellectual property rights (IPR) issues in the areas of UCC and points to areas where further work may be needed.[80]

Copyrights in the context of user-created content

190.   Different kinds of UCC have different copyright implications: original works created by users, UCC created through the derivative use of another's work (either permitted under fair-use or statutory exemptions and sometimes not) and finally a grey area of works which, at least on the surface, lie in between original and derivative works. These various types of UCC entail different copyright issues, including on the question what constitutes an infringement and how to define and manage fair use of copyright.

191.   *Original works created by users:* A large amount of UCC consists in users uploading their own pictures, videos, in creating their personal blogs and podcasts, and their own work of art. The originality requirement to obtain copyright does not necessarily imply an elevated standard of quality or effort (WIPO, 2006a), and users creating such original work are automatically granted exclusive rights. Infringement issues only surface when third parties violate the UCC creator's exclusive rights without benefiting from exceptions or limitations. In the same vein as for other forms of content creation, copyright for UCC can be considered a catalyst to the production of original works. This holds especially true when users are interested in pursuing some gainful activity through the commercialisation of their works. Through the control of reproduction and derivative work, users also retain control of the way their work is used (including how it is commercialised) and can hence avoid, for example, unwanted modification of their works.

192.   Creators or UCC platforms can also opt for flexible licensing schemes, such as the Creative Commons license. Under these licenses others are allowed to copy and distribute a work provided that the licensee credits the author/licensor. In addition, other rights may be reserved or waived (e.g. right to create derivatives on non-commercial terms). Examples would be an attribution license, whereby others can copy, distribute, and remix the work as long as the original author is attributed. While flexible licensing schemes may permit the copying and the non-commercial re-use, original authors can specify certain restrictions which have to be observed by those interested in creating derivative works.

193.   *Derivative works:* By law users creating content have to respect the exclusive rights of other content producers, i.e. of those who choose to work within and those who choose to work outside professional routines and practices (or some combination thereof). Copyright issues may thus arise when users create content by using - in part or in full - pieces of others' work without authorisation or without benefiting from exceptions.[81] Examples which entail replicating or transforming certain works are the use of particular characters (e.g. from Lord of the Rings) in writing fan fiction, using certain images and texts while blogging (e.g. using press agency pictures when blogging, using large excerpts of news reporting video footage in one's news commentary), creating lip-synching videos or music mash-ups with samples of existing songs, and the creation of UCC videos while using copyrighted characters, texts or video images.

194.   Yet copyright laws typically limit in one way or another the copyright holder's ability to control derivative works.[82] Depending on the OECD country in question, 'fair use'- and 'fair dealing'-provisions

or statutory exemptions allow courts to avoid the rigid application of the copyright statute when, on occasion, it would stifle the creativity which copyright law is designed to foster. Under these circumstances, portions of works can be used without permission and without payment if their use is either 'fair' or considered to be part of the copyright exceptions. Most copyright acts contain limitations for the following activities: personal use, quotation and criticism, comment, parody, news reporting, teaching, scholarship or research, educational and library activities, and – depending on the country in question – other forms of use. In all OECD countries, the latter exceptions are varied reflecting local traditions and are decided on case-by-case basis. In addition to these activity-bound exemptions, copyright laws of the Anglo-American tradition provide for general fair use or fair dealing provisions (Hugentholtz, 1997). These different concepts are explained in Box 4.

Box 4. Fair use and copyright limitations

On the international level, exceptions and limitations on the national level are allowed but regulated by a so-called 'three-step test'. While permitting fair use to be regulated at the national level, the Berne Convention for the Protection of Literary and Artistic Works in 1967[83] and other international copyright treaties[84] specify that countries can instate such exceptions in their national laws if they meet three conditions: (i) being confined to special cases, (ii) no conflicting with a normal exploitation of the work and (iii) not unreasonably prejudicing the legitimate interests of the author (Fiscor, 2002; Senftleben, 2004). The agreed statement concerning the three step test in article 10 of the WIPO Copyright Treaty also underlines that, these provisions permit signatory countries to devise new exceptions and limitations that are appropriate in the digital network environment.[85]

National approaches to the determination of exceptions and limitations vary.

Rather than specifying a closed list of limitations, common law countries allow for a particular type of limitation on exclusive rights, i.e. fair use and/or fair dealing exceptions (Guibault, 1998; WIPO, 2006b). Under US copyright law, for example, any use (regardless of purpose) is legitimate as long as it is 'fair'. Multiple factors which resemble the above three-step test exist for determining fair use on a case-by-case basis: (i) purpose and character of the use (e.g. use for non-profit educational purposes), (ii) the nature of the copyrighted work, (iii) the amount and substantiality of the portion used in relation to the copyrighted work as a whole, and (iv) the effect of the use upon the potential market of the copyrighted work.[86] According to the legal literature, the fourth factor is the most significant one. The degree to which the author of the derivative work transforms the original work in some creative way to give it additional value or meaning also bears on the decision. Furthermore, US copyright law also lists categories of uses that might be fair, such as criticism, comment, news reporting, teaching, scholarship, and research, that enumeration is not exhaustive.[87] These exceptions and this four-factor test is applicable to UCC: i.e. as soon as large portions of a work are taken over, as soon as commercial implications arise which deprive the original author of (potential) income (whether through direct payments or advertisement-related business models) fair use exemptions are less likely to apply (c.f. Gasser and Ernst, 2006).

The approach in other OECD countries such as Australia, member countries of the EU, Korea and Japan is rather to define a set of closed purpose-specific exceptions to exclusive rights.[88] In Australia, 'fair dealing' is a use of a work specifically recognised as not violating exclusive rights. However, in order to qualify for such exceptions a use must fall within closed purpose-specific exceptions (e.g., review or criticism, parody, satire, research or study, news-reporting) and certain circumstances must be met (depends on nature of the created work, effect of the use on any commercial market for the work, etc.). In the UK, the 'fair dealing' approach also specifies a list of situations where 'dealing' with a protected work is permitted.[89] The 'EU Directive 2001/29/EC on the harmonisation of certain aspects of copyright and related rights in the information society (EUCD)' introduces an exhaustive list of exceptions and limitations (see also European Commission, 2006).[90] This list is amenable to the various legal traditions of the EU member states. The EU Directive also mandates the adherence to a variant of the three-step test described above.[91]

Finally, Korean and Japanese Copyright Acts contain categories of uses for which the exclusive rights of authors does not hold: e.g. educational uses, quotation, news reporting, etc.[92] In particular, the anchored fair use rights to non-profit performance may – under certain circumstances - be relevant to UCC.[93]

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195.   No matter whether copyright systems follow a 'fair use' doctrine or whether they opt for a specific list of exemptions, broadly speaking the application of these standards are complex, i.e. predictions what a court will decide when applying these standards are difficult (Cotter, 2006, Litman,

2006). Also, in the digital environment the key questions are how to define 'fair use' and other copyright exceptions when citations and compilations are increasingly prevalent and easy. Also in a multi-media environment with mixes of text, video, and graphic works, concepts such as 'citation' may be blurry.

196.   If no fair use exemption can be invoked, the creator has to obtain permission from original authors to perform remixes, mash-ups, parodies or to blog (or from collective rights management organisations representing them). There remains a degree of legal uncertainty on the side of the creator of the original work as well as with the creator of the derivate work. While this legal uncertainty may lead to the creation of less derivative works, it also has advantages, namely that courts maintain some degree of flexibility when deciding on fair use. Similarly to provisions of free speech, an expansive meaning of fair use open to interpretation can be applied.

197.   The general question for UCC is what the effects of copyright law on non-professional and new sources of creativity are, and whether copyright law needs to be re-examined in view of the online environment in order for it not to unnecessarily stifle innovation and to allow for the coexistence of market and non-market creation and distribution of content.

198.   On the one hand, current legal interpretation maintains that standard copyright rules and its exceptions are a necessary condition for creativity and that the exceptions and limitations work well (Ginsburg, 2002). As in the offline environment, IPRs may spur innovation and increase the 'wealth of networks'. In principle, an expansive interpretation of exceptions for 'parody', 'citation' or the 'right to non-profit performance' may cater for many UCC works which borrow from other works with authorisation. The resulting case law may increasingly determine the boundaries of fair use and produce clarity in the UCC context. This is also the thinking pursued in recent national and international legislative approaches (i.e. the WIPO Internet Treaties) which propose a combination of exclusive rights and limitations. Moreover, a sizeable share of original UCC works are not concerned by these considerations as no derivative works are involved, and many examples of UCC may qualify for the standard limitations on copyrights.

199.   On the other hand, proponents of UCC have voiced concerns which are largely based on the idea that non-commercial users have different incentives to create, use and to share than established professional content holders and that these incentives shall be preserved due to their social and cultural impact.[94] These concerns centre on how a stringently applied copyright law on derivative works could stifle creativity that digital technology enables (Lessig, 2004; Fisher, 2004, 2006). It has been argued that would-be users are often deterred from engaging in conduct that would most likely fall within the ambit of fair use (and hence be legal), due in part to concerns over incurring legal fees and also to the uncertainty and unpredictability of the fair use approach itself (Cotter, 2006). The fact that the IPR system may not have kept pace with progress in this sense and that content production based on the reuse of existing materials – such as sampling or mash-ups - should not be penalised per se has been echoed at the policy level.[95]

200.   *Facilitating UCC creation*. Facilitating the creation of UCC-related works is a challenging task, as solutions are likely to have to be on the global level and/or because they may involve changes to current copyright systems.

201.   Overall more flexible and efficient licensing processes for copyrights (including for non-UCC areas) seem ever-more important in the digital context (OECD, 2006c). While necessary to protect rightholders, requesting rights may entail burdensome licensing negotiations which – in many cases - are very likely to prevent the user-created derivative work from being created (i.e. the time and money to seek out the owner of content, and the hurdles to negotiate the appropriate consents and licenses are insurmountable for individual UCC creators, particularly if they have no commercial intent). In some cases

the original author of a work will not be identifiable and thus cannot be contacted. Solutions could aim at facilitating the licensing process to enable users to legally use others' works in creating derivative works (especially when the author is not identifiable). In the context of digital content and UCC this could, for example, involve the creation of clearing houses/centers for the attribution of rights to UCC and other creators. New ways to licence copyrights and new technologies to facilitate this process could be deployed.

202.   The expansion of fair use-type provisions to derivative works that are transformative (rather than consumptive) and non-commercial have also been proposed, based on the argument that remixing of others' work can also serve to benefit original creators by providing increased exposure (Litman, 2006, Fisher, 2004). This could be achieved by introducing limitations on exclusive rights for UCC purposes or by altering the concept of 'derivative work'. Commercial use of such derivative works would continue to be regulated by the regular statutory rights and limitations. These suggestions imply changes to copyright laws. They rely on the existence of a clear diving line between commercial and non-commercial content.

203.   Clearly, the suggested benefits from such new approaches would have to be weighed very carefully against their costs, including, for example, to the established commercial content industry which produces significant economic value. Beyond suggestions more study is needed of the extent to which UCC creates valuable creative works and associated private and public benefits – i.e. what is the opportunity cost of potentially limiting the creation of UCC works via current copyright laws – and to what extent there currently exist roadblocks to the growth of UCC. Hitherto the available statistics seem to indicate fast growth of UCC. The question is to what extent this could be even more rapid, or whether there exist constraints on further growth.

204.   On the one hand, it can be noted that, to date, rightholders are mostly focussed on UCC platforms which host unmodified snippets or entire reproductions of their original works without authorisation. So far there seem to be relatively few legal cases directly aimed at the creation of non-commercial derivative works by individuals. This may reflect a 'wait and see'-attitude by rightholders and some hesitancy to start extensive legal campaigns against new kinds of use. It may also reflect the fact that many such legal actions take the form of take-down notice and 'cease and desist'-letters which are sent to UCC platforms and individuals asking them to take-down certain potentially unauthorised content but which may never lead to measurable, legal actions.[96] On the other hand, as the UCC phenomenon spreads, legal actions against private creators of derivative works may become more widespread. Recently, for example, bloggers who posted audio clips of part of a copyrighted broadcast to criticise the content and tone of the programme were asked to take down relevant material. In other cases, original UCC and derivative works seem to be affected by today's actions of right holders (see discussion in later section).

205.   Finally, experimentation with new models for the economic use and creation of new digital content are ongoing which do not rely on changes of statutory rights and exceptions of copyright regimes, i.e. flexible licensing regimes such as the Creative Commons.[97] The idea is to facilitate the release of creative works under liberal license terms that would make works available for sharing and reuse. These may address the particularities of content created by amateurs and allow for a parallel coexistence between traditional commercial content and free UCC. But their impacts are not clear and merit further study, including positive or negative effects on the creation process (OECD, 2006a). Introducing further diversity in access and licensing regimes to creative works may also have disadvantages (Elkin-Koren, 2006). In sum, the legal, economic and social meaningfulness of such licenses has not yet been fully gauged.

Copyrights and the terms of services of UCC sites

206.   As shown by the analysis of the terms of service (Table 8), most UCC sites specify that they retain IPRs in their respective content (e.g. text, software, graphics, layout, design – especially in cases such as Second Life or social networking sites with their own software and content).

207.   UCC platforms usually grant users who upload content the right to retain copyright in their work. This right is enforceable and applicable both online and offline, both for non-profit and commercial ventures. According to the terms of services of the sample of UCC platforms, users agree that they have given the site a licence to use the content, mostly without payment.[98] Competitors with profit-sharing strategies and arrangements have also emerged. At times the sites reserve the right to prepare derivative works of the content posted by users and the terms of service requires the uploader to waive their moral rights. Some sites reserve the right to commercially exploit the works posted by users or to license the content to third parties. Some sites require the user to agree that the content will be subject to the Creative Commons license. In some cases, unclear terms and conditions or a failure of users to read the latter, may lead the user to agree to granting additional rights (even after the user has taken down the content and even for commercial purposes). Often, however, the license agreed to by the user terminates at the time the user removes such content from the Internet site, hence eliminating the licence granted to the UCC platform.

208.   A further issue is that some sites reserve the right to modify or terminate the service for any reason without notice at any time, and that this may have consequences on content stored or acquired by users. If, for instance, a UCC site terminates or modifies the service a user may lose his/her uploaded content, the way it was tagged and organised, potentially his/her avatar, and with it many hours of labour invested to create the content.

Table 8.   Intellectual property provisions in terms of service of UCC sites

Content created by site	Most sites specify that they retain IPRs in their respective content (e.g. text, software, graphics, layout, design) under copyright.
Content created by users	- Most sites specify that users who post content retain ultimate ownership, but that that they have given the site a licence to use content without payment. In other words, by posting the content the sites receives a limited irrevocable, perpetual, non-exclusive, transferable, fully paid-up, worldwide license (with the right to sublicense) to use, modify, publicly perform, publicly display, reproduce, and distribute such content. - Most sites specify that this license does not grant the site the right to sell the content, nor to distribute it outside of the respective service. - Most sites pledge to mention the identity of the user, the author of the work, and also the title of the work, in so far as technical conditions make this possible. - Most sites specify that the license terminates at the time the user removes his/her content. - Yet some sites reserve the right to prepare derivative works (modify, edit) content posted by users or the right to adapt. At times, it is specified that the site may commercially exploit the works posted by users. - Some sites however specify that users lose their IPRs and forfeit payment in perpetuity (even when the content is removed). Sometimes the sites also ask the user to admit 'moral rights' (meaning that site does not have to give the author credit). - Some sites require the user to agree that the content will be subject to the Creative Commons license. - Some sites reserve the right of reproduction, i.e. the right to reproduce, without limitation on any known or unknown medium, known or unknown, current or future, especially optical, digital, paper, disc, network, diskette, electronic, DVD, etc. - Some sites reserve the right to distribute the work or to sublicense rights to third parties. Mostly, it is proposed that revenue from these activities be shared between the user and the site. - Some sites reserve the right to use name and content of users for advertising and promotional purposes (promotional license)

Reservation to terminate the service and delete objects	Most sites reserve the right to modify or terminate the service for any reason, without notice at any time which may have consequences on content stored or acquired by users.

Source: OECD based on review of the terms of service of a sample of 15 widely-used English-speaking UCC sites.

Copyrights and the liability of UCC platforms

209.　　As discussed above, the growth of UCC is accompanied by the emergence of many sites and online intermediaries hosting the content which users upload. In some ways their existence drives the growth and access to UCC (and vice versa). From a copyright perspective, however, the question emerges in which way online intermediaries are liable for copyright matters.

210.　　For example, copyright issues arise when users post unaltered third party content on UCC platforms without authorisation (e.g. uploading parts of popular TV series without the explicit consent of the content owner). While this activity is outside the scope of UCC as defined in this study, it is a key concern of rightholders. Depending on the degree of added creativity and transformative nature, the dividing line between reposting unchanged third-party content without authorisation – an act which is not compliant with copyright law when not falling under fair use or other exceptions – and the creation of original UCC or derivative works is blurred when changes are relatively minor. Online intermediaries may thus also face criticism for hosting derivative works which users created under fair use exceptions.

211.　　As regards the simple reposting of their content, rightholders are beginning to engage in relevant actions against potential infringement. Associations representing content owners have sent take-down notices and have asserted potential lawsuits against UCC platforms.[99] An example of interactions between rightholders and a UCC site is the recent legal case between YouTube and Japanese Society for Rights of Authors, Composers and Publishers (JASRAC) which complains about music videos being uploaded to YouTube without rightholders' permission. Major media companies have also requested online video sites to remove their content. The essential question is whether UCC platforms are directly or indirectly liable for content posted on their respective sites and under what legal framework they operate.

212.　　This discussion is reminiscent of legal activities and cases concerning the liability of Internet Service Providers (ISPs) for content uploaded by their users (c.f. Litman, 2000) and later legal activities surrounding the use of file-sharing sites and peer-to-peer networks themselves. The essential question is whether online intermediaries be treated as electronic publishers, and thus made directly liable for all content on their servers and site, or whether they are essentially pipes exempt from all liability (Koelman and Hugenholtz, 2003, WIPO, 2005). While online intermediaries may not be considered direct infringers, they can be found liable to induce, or materially contribute to the infringing conduct of their users under the principles of contributory liability or secondary / indirect infringement.

213.　　No internationally harmonised legal treatment of online intermediaries exists when it comes to copyright liability. And as national legislatures have dealt with the liability of online intermediaries in different ways (see Box 5), globally operating online intermediaries operate under quite some legal uncertainty.

214.　　Whether UCC platforms can be treated as a 'mere conduit' under these above exceptions for online intermediaries is an ongoing question. As depicted in Table 9, most UCC sites specify that users who post content are responsible for it. They must own all rights to it or have express permissions from the copyright owners to copy and use images. They may not violate or infringe upon the rights of others. Moreover, the terms of service of UCC sites specify that when valid notifications are received, the service

provider usually pledges to respond by taking down the unauthorised content.[100] Then the owner of the removed content is contacted so that a counter-notification may be filed.

Box 5. Copyright liability of online intermediaries

In their copyright or e-commerce laws many OECD countries have addressed the liability of ISPs and other information intermediaries who merely deliver content by creating liability exceptions ('safe harbour' under the Digital Millennium Copyright Act of the United States[101]) for online intermediaries. This is an exemption from secondary liability but constrains the online service providers to remove infringing materials upon notice. Under the Digital Millennium Copyright Act, for instance, following the 'notice and take down procedures', ISPs are responsible for taking down unauthorised copyrighted material when a legitimate claim of a rights holder is presented to them.[102] They are also responsibly for terminating access by repeat infringers. Similar principles on the liability of online intermediaries also exist in Australian copyright law[103], i.e. providers are not obliged to actively self-monitor for infringing activity.

The EU Directive 2000/31/EC on e-commerce also establishes an exemption from liability for intermediaries where they play a passive role as a 'mere conduit' of information from third parties and limits service providers' liability for other 'intermediary' activities such as the storage of information.[104] No monitoring obligation exists for the service provider.[105] Activities which involve the modification of transmitted information, for instance, do not qualify for this exemption. The EU Directive also encourages ISPs to act expeditiously to remove or to disable access to the information concerned upon obtaining actual knowledge or awareness of illegal activities.[106] Such mechanisms are to be developed on the basis of voluntary agreements and codes of conduct between all parties concerned.[107] In EU Member States such as Italy and France but also on the EU level, public-private partnerships emerged regrouping ISP, rightholders and the government to promote the development of legal online content (OECD, 2005b). The resulting codes of conduct imply that upon notice ISPs should – while respecting privacy laws - contact users uploading infringing material and potentially terminate their accounts.[108]

Table 9. Intellectual property provisions in terms of service of UCC sites

Users are responsible for uploaded content	Most sites specify that users who post content are responsible for it. Uploaders must own all rights to it or have express permissions from the copyright owners to copy and use images. They may not violate or infringe upon the copyrights of others.
Take down notice procedure	When valid notifications are received, the service provider usually pledges to respond by taking down the offending content. Under some legal regimes, it is specified that the owner of the removed content is contacted allowing him/her to file a counter-notification.

Source: OECD based on review of the terms of service of a sample of 15 widely-used English-speaking UCC sites.

215.   While under certain circumstances, UCC platforms may benefit from the exemption, UCC platforms could also be held liable under domestic law for facilitating, inducing or authorizing copyright infringement (recognizing that this form of liability is treated slightly differently among OECD Member States). Under the principle of contributory liability, it may be that such online intermediaries are found liable to induce, cause of materially contribute to the infringing conduct of their users. This holds particularly in cases where UCC platforms have knowledge of the infringing activity (i.e. 'wilful infringement'), when they do not simply host but edit or categorise the content (which is mostly the case), when they induce users to post unauthorised content (c.f. the US Supreme Court Ruling vis-à-vis the Grokster case[109]), or when they derive revenues (e.g. advertising-related) from unauthorised postings.[110]

216.   But there are also cases where the simple take-down notice procedure may lead to UCC being taken down without a legitimate reason. UCC platforms receiving notifications from media companies may prefer taking down the respective content rather than risking legal pursuit. Courts are not involved in this decision. And there have been cases where UCC has been deleted from UCC platforms by error, e.g. when title of the video clip resembles copyrighted content or when in fact, fair use or free speech exceptions may

apply.[111] While the individual may have the right to counter-notification in some OECD jurisdictions, it is difficult to obtain information on whether these counter-notifications succeeded.

217.   Despite these concerns of rights holders, the latter have also increasingly been interested in deriving value from UCC platforms and in implementing appropriate business models while leaving the copyrighted material on UCC platforms often also noting the significant promotional value of such content. Many times relevant IPR challenges will be resolved through appropriate business agreements between rights holders, UCC platforms and other associated entities. Upon the request of rightholders and to avoid legal actions against them, some UCC platforms have announced or adopted technologies (e.g., acoustic fingerprinting, watermark detection) preventing the upload of unauthorized content.

Digital rights management

218.   The opportunities and challenges raised by digital rights management (DRM) and the need for appropriate disclosure have been discussed elsewhere (see for fuller treatment OECD 2005b; 2006c, f).

219.   Effective and interoperable DRM technologies have been seen as business enablers for the digital distribution of content and drivers for the variety of new business models that consumers may want (OECD, 2005b).[112] Under the assumption that users creating content want to protect their copyrights (e.g. avoid copying or the creation of derivative works) or commercialise their content, DRM thus creates opportunities for UCC. It can be envisaged that users who create very popular content may eventually be interested in entering into commercial agreements with publishers, media companies and various distribution platforms. It may also be that UCC creators would like to protect their exclusive and moral copyrights through DRM but not forego their large dissemination. This content security and amenability to new business models made possible by DRM then acts as facilitator of the growth of UCC.

220.   In most cases, the DRM protects the exclusive right of an author or right-holder and thus it is a direct manifestation of the current copyright regime. Nonetheless, technical access limitations to content are also reported to have negative effects on the growth of legitimate UCC as they generally prevent access and modification of files, thereby limiting access to works for creators of derivative works or reproduction under fair use principles. Following their ratification of the WIPO Internet Treaties, governments have pledged to create 'adequate legal protection and effective legal remedies against the circumvention' of technological protection measures like DRMs. These make it illegal to circumvent existing technological protection measures to access the content. For example, if a user wanted to make a parody remix of a film or a teacher an educational video, the technological protection measures could prohibit the user from extracting the portions of the video to do so. In some countries it would effectively be illegal to 'circumvent' a technological protection measure – even if it falls under fair use or other statutory exemptions described earlier. The question then arises how technical protection measures can be implemented while preserving the balance between exclusive rights and fair use (see also WIPO, 2006b).

221.   In some OECD countries, the circumvention of DRMs has recently also been made possible via the introduction of certain exceptions. For instance, the US Copyright Office has created new exemptions to the Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies (e.g. when circumvention is accomplished for the purpose of making compilations of portions of those works for educational use in the classroom by media studies or film professors).[113]

222.   In sum, the potential effects of DRM and legal protection of circumvention on non-infringing uses and the need for updated exceptions may need further monitoring to maintain the balance between exclusive rights and exemptions. Further evidence of cases where fair use has been hampered may be needed as currently little analysis in this field exists (Ginsburg, 2002).

Freedom of expression

223.   The Internet can be seen as an open platform enriching the diversity of opinions (including product reviews), various political and societal debates, the flow of information and the freedom of expression. UCC is in many ways a form of personal expression and speech. Users are engaging in a form of democracy where they can directly publish and enable access to their opinions and personal knowledge and experiences. Preserving this openness and the decentralised nature of the Internet may thus be an important policy objective. Censorship, the filtering of information (including through ISPs or UCC sites themselves), depriving users the access to certain information or tools for self-expression are in contradiction to the above policy principle.[114] As discussed later, a balance between freedom of expression and other rights - e.g. the posting of illegal or unauthorised copyrighted content - must be struck.

Information and content quality

224.   The fact that UCC is produced in a non-professional context outside of the traditional media oversight and often without any pecuniary remuneration can have implications for the 'quality' of material being posted – with the concept of quality being very hard to define (quality having a very subjective and contextual component). Content quality problems relate to two different but interrelated matters:

- **Information quality and accuracy**: In the case of blogs, commentary and other UCC forms which refer to facts and figures, the accuracy of content and proper acknowledgement of sources may not be guaranteed. For example, bloggers do not necessarily have an incentive to check the information that they are providing or they may not properly cite sources. The risks associated with inaccurate, defamatory and uncheckable information spreading over the web are seen as increasingly important. The availability of all amounts of information (some accurate and some not) shifts the responsibility to users for correctly assessing information found on UCC sites. Especially, younger generations will have to acquire the skill to differentiate between fake and correct information. This is an entirely new way of approaching information as compared to the previous media setting in which information was generally thought to be correct. This is not to say that the information quality on UCC sites is generally flawed – in some instances information quality may be high (as demonstrated by recent comparisons of Wikipedia and Britannica finding few differences in quality, see Giles 2005). According to a survey mentioned earlier about 50% of Asisan users believe content on blogs to be as trustworthy as established media.[115]

- **Content quality**: Many UCC posts may not have stood the test of a traditional editorial review or media selection process (i.e. the comparison between Figures 6 and 5). Content posted on UCC platforms may, for instance, suffer from low technological quality (e.g. online videos posted may have bad image). Sometimes the quality of the content itself could – objectively or subjectively - be judged below standards. Yet, while the accuracy of information can often be verified by commonly known and accepted standards, quality of content is hard to define. Content posted by users may be of exceptional value to other users, particularly if it has a personal touch and this despite suboptimal technical quality and lack of a good plot or newsworthiness. Also, the high demand for UCC points to demand for such content types.

  Furthermore, while the selection process for content of many traditional media outlets may be more organised, the latter may not be exempt from quality problems and the inaccurate provision of information (e.g. the content diffused over TV channels has also been criticized, or wrong information has been diffused). Also, it is important to stress that an important share of UCC which is not posted anonymously (e.g. personal blogs) can be of very high quality as creators of that information care about their reputation, and have high incentives for accuracy.

225.   As users are free to choose and often rate content, bad information sources may not draw a lot of visits. Ways and means to improve the reliability and the quality of information on sites hosting UCC have been invented which may alleviate the problem of lacking accuracy and oversight. Sites hosting UCC, aggregators and other mechanisms assessing quality and credibility which often harness the 'collective intelligence' of users also have a greater ability to rapidly correct misinformation through 'collaborative filtering'. Later tools could later find important business and other applications to structure large amounts of information.

226.   Following forms of governing UCC sites have emerged: **Pre-production moderation**: Content submitted by users is not posted until reviewed by expert or person controlling for exactness and quality, **Post-production moderation**: Content submitted by users is accessible by everybody immediately but moderation may opt to review, make changes or delete the content after it being posted; **Peer-based moderation**: Content submitted by users is available immediately, but can be edited, reviewed or even deleted by certain or all users of the same UCC platform. Due to the fact that a greater group of people is involved, peer-based moderation is said to be best to maximise the potential of UCC platforms.[116] However, this system of moderation also places the greatest responsibility with the community of users. New governance schemes have also emerged with allow for the rating and recommendation (i.e. social filtration and accreditation). [117]

227.   As the importance of reviews, tags and ratings increases, users are tempted to abuse of those systems while including wrong or biased reviews (review fraud) or engaging in misleading tagging of their content (i.e. a member uses popular but irrelevant keywords to describe his/her video or other content in order to draw more traffic). This reduces the overall reliability of ratings and the overall searchability of the network. UCC sites make an effort to diminish the possibility of such abuses, and maintain relevant sanctions. But overall, problems of information and content quality and accuracy may remain.

Mature, inappropriate, and illegal content

228.   Similarly to the situation of online multiplayer computer games (c.f. OECD, 2005d), few technical limits are imposed on the users with respect to their thoughts expressed or to their actions. Thus most UCC platforms allow for rather free expression of their users.

229.   This is a very new and previously unknown phenomenon which bears opportunities and challenges. As everybody can express rather freely, sites hosting UCC have been sources of explicit language and behaviour, mature content, gambling, harassment, and defamatory speech. In the UK and Korea, for instance, various policy-makers have voiced concerns over violent videos on video-sharing sites (e.g. students being assaulted and filmed by other students). Newer type video-sharing sites which do not filter the content or allow live broadcasts can be a new source of concern. Different OECD countries have different rules (especially as regards indecent or mature content) and the degree to which rules on freedom of expression would permit such expressions or make their unlawfulness hard to establish. All in all, it needs to be kept in mind that UCC platforms are just one of the many Internet-based outlets for dubious content.

230.   Most UCC platforms make quite clear that they do not police content or that they do not assume editorial responsibility for the content created (see Table 10). This is an important point for policy-makers aiming to enforce laws on illegal content or to reduce the spread of inappropriate content which may be deemed inappropriate or harmful to certain viewers, e.g. minors.[118]

231.   Moreover, often UCC platforms and communities have adopted community standards and associated rules taken by the service provider to reduce the incidence of inappropriate content and actions (see Table 10). These include, for example, rules on tolerance, on harassment, on assault in virtual worlds

(e.g. shooting, shoving, etc.), on privacy and the prevention of disclosure of information, on indecency, or on undesired advertising content. If not respected, the service provider reserves the right to take actions against the user (e.g. temporary or permanent suspension of accounts). In general, however, it remains difficult for businesses, online communities or governments to monitor all content available while being able to clearly determine what content is illegal. In particular, this is a problem for children accessing the Internet. UCC platforms often specify age limits in their terms of service (see Table 11), yet these may be difficult to police.

Table 10. Content and conduct provisions in terms of service of UCC sites

Content regulation and editorial responsibility	• Most sites specify that users are solely responsible for the content that they publish or display on Web Site, or transmit to other Members. The sites specify that they have no obligation to modify or remove any inappropriate Member Content, and no responsibility for the conduct of the Member submitting any such Member.
	• The sites reserve the right to review and delete or remove any Member which does not correspond to defined standards.
	• Some sites use age and content ratings or have areas for content which is rated mature .
Community standards	• Most sites have community standards on intolerance (derogatory or demeaning language as to race, ethnicity, gender, religion, or sexual orientation), harassment, assault, the disclosure of information of third parties and other users (e.g. posting conversations), indecency, etc.
Actions to enforce standards	• Sites specify penalties when users infringe community standards. They range from warnings, suspensions to banishment from the service. The creation of alternate accounts to circumvent these rules is being tracked.

Source: OECD based on review of the terms of service of a sample of 15 widely-used English-speaking UCC sites.

232.   Technological, legal, self-regulatory solutions may help to limit access to such content and reduce the negative impacts. Age rating systems or age limits are seen as important to ensure protection of minors. These rating systems need to be clear and increasingly internationally recognised and adhered to be meaningful on the Internet (see OECD, 2005d). Filtering software and other parental controls may provide solutions.

Safety on the Internet and awareness raising

233.   When users create profiles on a particular site there is no verification of the actual identity of the user. This can be useful in cases where users may wish to create parody or political pages. A certain degree of anonymity may also stimulate creativity. Yet it can also pose a risk when users may misrepresent themselves for illegal purposes. Other sites have greater verification of a user's identify via their school or work email address and limit networks to schools or workplaces.[119]

234.   Thus it is possible for users to misrepresent their identities, such as pretending to be a different age or gender, and succeed in deceiving other users, particularly younger ones. There have been documented cases of sexual offenders and other criminals gaining access to users, particularly the young, via social networks. It remains to be seen however, if these are not isolated cases. As the Internet is an open platform, legal offenders may also be easier to track than in an offline environment, as evidenced by recent successful police investigations.

235.   Implementing proper safety measures, educating parents and children, and trying to minimise the risks of such behaviour should be a priority for law enforcement, government officials and SNS (Magid and Collier, 2006). Several initiatives have been started to educate teenagers and parents in this respect (e.g., SafeTeens.com, BlogSafety.Com, SaferOnlineDating.org) and technological solutions such as monitoring software are available (Software4parents.com). Despite their shortcomings, age limits and rating schemes and software technologies may also play an important role. The UCC platforms themselves

have started to foster awareness concerning the dangers relating to exposing private information (see Table 11).

Table 11. Age limits and warnings in terms of service of UCC sites

Age limits and age ratings	• Most sites require users either to be 13-14 years old or 18 years. Some put the bar at 16 years. Some have special subsites or parts of virtual worlds which are reserved for teenagers[120]. Use of those subsites by older uses is not permitted.
Warnings on releasing information	• UCC sites now post warnings not to post contact details or places where one can be found, warnings about adding strangers to friends' lists, warnings about inappropriate content, warnings about posting something which could embarrass the user or somebody else, warnings about reporting false age, warnings about phishing, i.e. third parties trying to get personal information, usernames and passwords.

Source: OECD based on review of the terms of service of a sample of 15 widely-used English-speaking UCC sites.

Privacy and identity theft

236.   Concerns have been raised about users increasingly posting more information about their identities, their lives and those of others (i.e. friends, family). Users post photos and videos, publicly accessible profiles on SNS, and online journals with intimate details of their lives on blogs and sites. While such sites offer privacy settings to limit the availability of this information to personal contacts or friends, many users choose to make their information available publicly. In principle, information which is not displayed publicly is protected and not sold to third parties (Table 12). In the case of a merger or acquisition by a third party, however, this information is an asset which is part of the transaction and which is handed over to the acquirer (Table 12). There may also be cases of data leakages which could due the nature of the information and pictures prove particularly damaging, although so far little is known about such cases which may have occurred in the context of UCC sites.

Table 12. Privacy provisions in terms of service of UCC sites

Privacy	• Most of the sites collect personal information relevant to the service stating that this is to provide the user with a customized and efficient experience. This information is protected and not sold to third parties. • Yet sometimes personal information uploaded on SNS sites are sometimes provided to advertisers (sometimes delivered directly) and other parties in a personally identifiable manner and aggregate usage information in a non-personally identifiable manner to present to members more targeted advertising. • Most sites reserve the right to transfer personal information in the event of a transfer of ownership or sale of assets. • Sites specify that personal information may be released for law enforcement purposes.

Source: OECD based on review of the terms of service and the privacy policies of a sample of 15 widely-used English-speaking UCC sites.

237.   Another potential negative consequence of the vast amount of personal information available online could be increased occurrences of violations of privacy or identity theft (phishing). SNS sites are reported to have been used to phish for users' personal information through spam campaigns. Individuals have utlised UCC platforms to expose content about somebody else (i.e. including posting online videos or other content which show persons not consenting to the upload) or creating accounts on behalf of another person with false information or content.[121] As a result, these peoples' ability to live a normal life has been compromised in some documented cases (Sang-Hun, 2006). Other examples exist, in which employers have made use of SNS to screen potential employees. Finally, identity thieves can much more easily track down the requisite information to mimic someone else's identity. Further work on privacy challenges resulting from UCC (including users voluntarily making their information public) would be useful.[122]

Impacts of intensive Internet use

238.   The impacts of intensive Internet use (including UCC) are a new source of research. While this phenomenon is not particular to UCC, the popularity of latter sites has contributed to particularly intensive Internet use. The blurring of the real and the virtual world may lead users to spend large amounts of time on the Internet and may fail to devote enough time to other obligations (e.g. school, work, and even basic things such as sleeping and eating). Emotional attachment to online friends and activities may lead to a deterioration of relationships outside of the Internet. Research also reveals a growing number of individuals for whom the medium becomes a consuming habit with potentially negative consequences (Aboujaoude et al, 2006).[123] These symptoms are often referred to as 'on-line addiction' (Young, 1996; Minoura, 1999).[124]

239.   Only a few OECD countries, such as Korea, report figures for Internet addiction (see Figure 12).[125] According to these official figures, the number of Korean Internet users with possible addiction stood at 3.3 percent of Internet users in 2004 and 2% in 2006 (and 11% with suspected addictions). These are however, related to online gambling in particular.[126] The Korean government has programs to reduce Internet addiction while educating students on 'healthy Internet use' (e.g. courses and the designation of Internet-free days).[127]

Figure 12.   Internet 'addiction' as reported by the Korean government, 2006
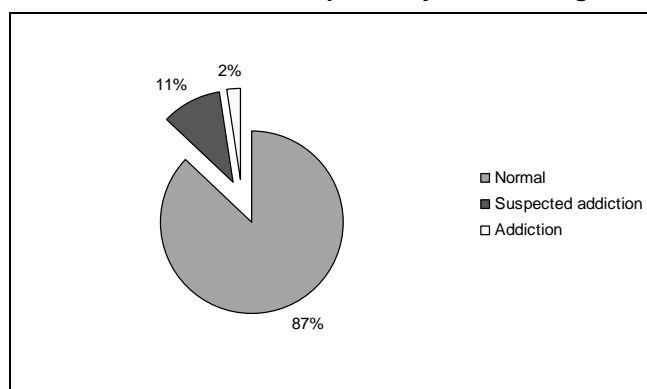
Source: Korean Ministry of Information and Communication.

240.   In sum, it needs to be kept in mind that such forms of intensive use are not particular to user-created content. Rather these relates broadly to how persons decide to go about their Internet and other media usage habits (e.g. Television, BlackBerry). Users which now engage more actively on UCC sites may have previously been watching TV in passive fashion. Sometimes the relationships created on UCC sites may not be solely virtual as examples of ensuing offline relationships have emerged. With 3D video conferencing and other technological developments emerging, virtual images and Internet-based communication platforms may facilitate day-to-day interactions.

241.   It is worth stressing that the social impact of the Internet at large and the impact of UCC-related past-times and communication forms on society and personal relations are hardly explored. The spectrum of predictions ranges from such Internet communications leading to the 'breakdown of personal relationships and social contact' to such Internet communications 'holding great promises for improving real life relationships and tasks'. More recent assessments point to people communicating more than ever but that their pattern of communication and interaction has changed (Statistics Canada, 2006[128]). Also, there is insufficient understanding of how media consumption generally affects brain processing, learning, attitudes, and behaviour, *e.g.* the impacts of virtual worlds on behaviour, or on learning / skills (see also OECD, 2005d for skills in the context of online games). More research in these fields may be warranted.

Network Security and Spam

242.   Like other information technologies, the participative web is not immune to information security risks. Many Internet sites today serve as platform for creation and sharing of content. One of the key factors to the growth of UCC was the ease of use in creating and publishing, including CMS, blogging services and wikis. As opposed to webpages of earlier generations, today Internet sites enable the posting of content and the modification of sites. This new form of interactivity and uploading of content from a large user base can be a new source for security problems (Finjan, 2006, Evers, 2006, Nuttall, 2006). In some cases, such sites have been used by hackers who uploaded malicious content (e.g. viruses) – achieving quicker and faster propagation. In other cases, the greater openness of the platforms for external contributions can cause problems without somebody actually trying to exploit this weakness on purpose. Often, bad implementations of the technology rather the technology itself may be the root of the problem.

243.   Despite provisions in the terms of services (Table 13), splogs, or spam blogs ('splogs'[129]) exist to promote the spammers' site, advertisements or related links, comment spam where a spammer will post comments, often hundreds at a time, to a legitimate user's blog, and wiki spam, where spammers will take advantage of the capacity to instantly edit a page.[130]

Table 13. Spam provisions in terms of service of UCC sites

Spam	• Most sites prohibit illegal and/or unauthorized use of the services, including collecting user names and/or email addresses of Members by electronic or other means for the purpose of sending unsolicited email.

Source: OECD based on review of the terms of service of a sample of 15 widely-used English-speaking UCC sites.

244.   Technologies may help to reduce spam.[131] For instance, there are tools within blogging software to identify such comment spam, such as Akismet. These tools may either automatically delete such comments or put them into a queue, whereby the blogger can review them for any possible legitimate comments.   Search engines have sought to combat link-related spam by the implementation of the 'nofollow' tag attribute.[132] Requiring user registration may also limit spam.

Virtual worlds, property rights and taxation

245.   Increasingly virtual worlds and games are seen as a platform for real economic transactions. The latter purchase virtual land and properties, create objects and sell them, develop skills and looks of their avatars. Sometimes these commercial transactions take place within the virtual world, sometimes outside of it (e.g. selling virtual objects on eBay). Increasingly this phenomenon of virtual economies with real-life impacts is also taken seriously by economists (Castranova, 2001, 2005). The question on how to 'price' virtual land which – in theory – is not scarce is just an example of the new questions raised.

246.   On a more practical level, commercial exchanges between the hosting site and the user or between the users themselves are – as ownership and commercial activity increases - likely to trigger a number of legal disputes in the future. As many times the objects created by the user are inextricably tied to the virtual world itself, establishing straightforward ownership rights may be difficult. Disputes have already arisen when the hosting site terminated a user's account thereby deleting his objects and land for actions on the UCC platform banned by the terms of service (c.f. last row of Table 8).

247.   Furthermore, the commercial activity in or around virtual world content is generating increasing interest from tax authorities.[133] As virtual assets and virtual capital gains increase which can be translated into genuine economic gains later (i.e. when users convert money back to real money or when they sell virtual items on consumer-to-consumer exchanges such as eBay), the latter wonder if and how such transactions should be taxed.[134] Tax authorities will be dependent on the taxpayer actually declaring such

sales as income to avoid an electronic version of the 'underground' economy. Finally, a number of OECD countries levy wealth and inheritance taxes. Interesting questions arise as to how these tax forms would apply to 'virtual', intangible wealth and thus unrealised gains. At present, tax authorities' attention has not been raised on these issues yet due to a combination of high thresholds for wealth taxes and the relatively low value of virtual wealth. But this could become an issue over time.

248.   In the light of growing influence of virtual worlds, governments will increasingly be faced with associated regulatory questions be it in the tax or other legal areas, especially when those sites operate in a legal vacuum or when it is unclear if and how existing laws apply in such online environments.

Governments as producers and users of content

249.   Governments posting content to inform their citizens would fall under e-government policies and do not relate directly to user-created content. Nonetheless, governments may – via discussion platforms at the local (virtual town hall), regional or national level or other Internet-based tools - incite comments or discussions from citizens. The latter may either inform ongoing debates relating to ongoing or future projects (public constructions, schools, etc.) or they may constitute an outlet for citizens to express themselves, potentially creating greater social cohesion and identification.

Conceptualisation, classification and measurement

250.   In general comparative international data on digital content products and industries is not available.[135] Benchmarking the impacts of digital content policies is complicated by the absence of this data.

251.   The lack of reliable official data on UCC and more knowledge on changing usage habits are a challenge. As a result, it is often hard to accurately assess the statistical, economic, and societal effects of UCC. In particular, the social impacts of greater Internet use will deserve greater attention in the future.

252.   New Internet usage measurement techniques developed by private data services and based on large sample sizes to monitor online behaviour (sometimes for advertisement-related purposes) entail opportunities in the sense of more detailed data concerning Internet user behaviour for targeted advertising but also challenges as regards the use of that data in the context of the protection of privacy.

ANNEX

Box 6. Participative web technologies

- Tagging, or the association of particular keywords with related content, such as photo tagging on photo sharing sites or link tagging on collaborative news sites. Generally, a user will choose a brief selection of such keywords that best indicate the content of a particular piece of audio, video, or text. Tagging has played a significant role in social bookmarking sites where users collaboratively store and publish their favourite links.

- Group rating and aggregation occurs on sites where users submit links and descriptions of articles and other content and where users have the ability to rate the content. Recommendation engines, particularly popular in the realm of music, are technologies enabling users to share tastes and discover new content. An example would be recommendation engines based on musical similarities, patterns emerging between users (e.g. those who liked x also liked y), or a combination of both.

- Syndication and aggregation of data in RSS/Ajax/Atom and other content management systems (CMS):

  – RSS: Really simple syndication is a technology that enables distribution and subscription to content so that users may automatically receive new posts and updates. RSS plays an extremely important role in blogging, and it is increasingly used for such emerging mediums as videocasting, podcasting, and photo streams. RSS files, also called feeds, transmit structured data which typically include headlines, dates, authors, content summaries and links to the full versions (Bowman, 2003; Gill, 2005). Users can subscribe to a feed and transform the transmitted data into information via a RSS reader. On the one hand, content creators are able to easily syndicate content for RSS readers. Often, RSS tools are already integrated in publishing software. On the other hand, readers are able to personalise web services: they do not have to check web pages regularly for new entries but are kept informed by their RSS readers.

  – Atom: The Atom Syndication Format is an XML language used for web feeds. Web feeds allow software programs to check for updates published on a web site. To provide a web feed, a site owner may use specialized software (such as a content management system) that publishes a list (or 'feed') of recent articles or content in a standardized, machine-readable format. The feed can then be downloaded by web sites that syndicate content from the feed, or by feed reader programs that allow Internet users to subscribe to feeds and view their content. The development of Atom was motivated by the existence of many incompatible versions of the RSS syndication format.

  – Ajax (Asynchronous JavaScript and XML) – one of the so-called Rich Internet Application techniques - is a web development technique for interactive web applications which encompasses different technologies. It can be better described as a pattern than a technology per se—it identifies and describes a particular design technique (McCarthy, 2005). The main advantage of this technique is that 'web pages are dynamically updated without a full page refresh interrupting the information flow" and allows creating 'richer, more dynamic web application user interfaces". This can be achieved by an Ajax engine which is interposed between the user and the server.

- Application Mash-ups and Open Application Programming Interfaces (APIs): Along with audio and video mash-ups, the term can also refer to a combination of multiple web applications. Mash-ups are a genre of interactive web applications that draw upon content retrieved from external data sources to create entirely new services (Merrill, 2006). This type of web-based integration aggregates and combines third-party data. API is the interface that a computer system, library or application provides in order to allow requests for services to be made of it by other computer programs, and/or to allow data to be exchanged between them (Wikipedia, 2006e). An Open API is when the API is made public to use, free of charge. A variety of web applications use open APIs, such as Google maps. This has enabled programmers to create combinations, or mash-ups, of Google Maps with other information sources. Examples include a map where all of the housing ads from Craig's List are place on a Google Map with relevant information, or the plotting of all of a city's crime incidences on a map with the time and date of occurrence. Other genres of web application mash-ups include video and photo mash-ups, where designers mash photos or video with other information that can be associated with the attached metadata (i.e. tags) (Merrill, 2006). An example includes taking news headlines and displaying photos with photos that are tagged with the particular words. News and RSS feed mash-ups such as NetVibes and My Yahoo aggregate various feeds and present them on a website,

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> enabling users to create a personalised page.
>
> - Filesharing networks: Peer-to-peer is essentially a communication structure in which individuals interact directly, without going through a centralised system or hierarchy. It is an example of network power and commercial exploitation through decentralised information exchange as opposed to centralised information control. With peer-to-peer technology, users may share information, contribute to shared projects or transfer files (OECD, 2004a). Peer-to-peer (P2P) networks open new opportunities for commercial and non-commercial content production and delivery as content, Internet service and technology providers are looking increasingly at ways to 'monetise" P2P networks (OECD, 2006a; EITO, 2006). This involves using P2P networks in legitimate ways rather than for the unauthorised downloading of copyrighted works.

Box 7. User-created content in China: Video

UCC has started to play an important role in China. Online video provides users with an outlet to express their creativity. A popular style of video in China involves spoofs, or parody-style remixes of other videos. An example was a video where a user spliced together videos to make it look like China had won the World Cup in 2006.

Top video sharing sites in China (August 2006)
1. Toodou.com
2. Qyule.com
3. Pomoho.com
4. 56.com
5. 365cast.com

Toodou, the country's most popular video sharing site, estimates it has between 7 to 10 million unique visitors per month and approximately 50000 people creating videos. Video sharing sites from OECD countries are trying to take foothold in China. Chinese traditional media companies are looking to forge partnerships with online video companies, as they realise that they stand to play an important role in the next generation of media.

Self-censorship generally occurs on online video sites in China, where explicit and content critical of the government are prevented from being posted. Many online video providers employ monitors that view videos and determine the suitability along self-imposed guidelines for the sites. A significant number of users post their videos anonymously, with fame not necessarily as the number one priority. Chinese video Web sites and clips may soon require approval for posting and distribution China's State Administration of Radio, Film, and Television (SARFT).

Source: OECD interviews with founder of Chinese video sharing service and Pacific Epoch statistics at www.pacificepoch.com.

Table 14. Growth in contributors to Wikipedia

	Jan. 2001	Jan. 2002	Jan. 2003	Jan. 2004	Jan. 2005	Jan. 2006	June 2006
Contributors (min. of 10 total contributions)	10	512	2423	10883	50281	145564	209331
Active Contributors (min. of 10 contributions per month)	9	205	834	3202	13301	47624	60412
Very Active Contributors (min. of 100 contributions per month)	n/a	29	187	684	2292	7516	7940

Source: OECD based on Wikipedia and presentation of Frieda Brioschi (Wikipedia) at www.oecd.org/dataoecd/15/14/36133622.pdf.

Table 15. Podcast Categories Rating

Category	No. of podcasts	Category	No. of podcasts
News & Politics	11409	Comedy	5106
Music	10342	Sports & Recreation	3266
Religion & Spirituality	9886	Health	2074
Art	7710	Games & Hobbies	1812
Society & Culture	7207	Kids & Family	1301
Education	6039	Science & Medicine	1085
Technology	5878	Government & Organizations	423
TV & Film	5671	*Total*	*82978*
Business	3769		

Source: Apple iTunes and 'iTunes Podcast Count over 82,000', in: Digital Podcast (9 October 2006), http://typicalmacuser.com/wordpress/?p=134.

BIBLIOGRAPHY

ABI Research (2006), Broadband Video ASPs White Label Platform Providers for Internet TV, Research Brief RB-DMDM-101, www.abiresearch.com.

Aboujaoude, E., L.M. Koran and N. Gamel (2006), 'Potential markers for problematic Internet use: a telephone survey of 2,513 adults", in: *CNS Spectr* No. 11, pp. 750-755.

Anderson, C. (2004), The Long Tail, in: *Wired Magazine* , October, www.wired.com/wired/archive/12.10/tail.html.

Balkin, J. (2004), 'Digital Speech and Democratic Culture: A Theory of Freedom of Expression for the Information Society', New York University Law Review 79 (2004): 1.

Benkler, Y. (2006), *The Wealth of Networks*, www.benkler.org/Benkler_Wealth_Of_Networks.pdf.

Castranova, E. (2001), Virtual Words: A First-Hand Account of Market and Society on the Cyberian Frontier, CESifo Working Paper No. 618, December, available at: http://ssrn.com/abstract=294828.

Castranova, E. (2005), *Synthetic worlds*, Chicago: University Of Chicago Press.

China Internet Network Information Center (CNNIC) (2006), Statistical Survey Report on the Internet Development in China, The 18th Survey Report (latest report from July 2006: www.cnnic.net.cn/download/2006/18threport-en.pdf).

Consumer Electronics Association (CEA) (2006), *U.S. Consumer Electronics Sales and Forecasts Report.*

Cotter, Thomas F., 'Fair Use and Copyright Overenforcement' (2006). Minnesota Legal Studies Research Paper No. 06-69 Available at SSRN: http://ssrn.com/abstract=951839.

Crampton, T. (2006), France's mysterious embrace of blogs, *International Herald Tribune*, 27 July, www.iht.com/articles/2006/07/27/business/blogs.php.

Elkin-Koren, N, 'Creative Commons: A Skeptical View of a Worthy Pursuit' . THE FUTURE OF THE PUBLIC DOMAIN, P. Bernt Hugenholtz & Lucie Guibault, eds., Kluwer Law International, 2006 Available at SSRN: http://ssrn.com/abstract=885466.

e-Marketer (2006a), US Online Ad Spending: Peak or Plateau?, www.emarketer.com/Reports/All/Em_ad_spend_oct06.aspx.

e-marketer (2006b), User-Generated Revenue?, www.emarketer.com/eStatDatabase/ArticlePreview.aspx?1004192.

European Commission (2006), Interactive content and convergence: Implications for the information society, Study for the European Commission (DG Information Society and Media), October 2006, http://ec.europa.eu/information_society/eeurope/i2010/docs/studies/interactive_content_ec2006_final_rep ort.pdf.

European Information Technology Observatory (EITO) (2006), 'Peer-to-Peer (P2P) networks and markets', Part 2, EITO 2006.

Evers, J. (2006), Blog feeds may carry security risk, CNET, 4 August, http://news.com.com/2100-1002_3-6102171.html.

Finjan (2006), Web Security Trends Report, San Jose, California, USA, October 11.

Fiscor, Mihály (2002), How Much of What? The Three-Step Test and Its Application in Two Recent WTO Dispute Settlement Cases, 192 Revue internationale du droit d'auteur 111, 231-42 (2002).

Fisher, T. (2004), *Promises to keep. Technology, Law, and the Future of Entertainment*, Stanford University Press.

Fisher, T. (2006), Speech at the OECD – Italian government Conference on *The Future Digital Economy Digital Content – Creation, Distribution and Access*, 30-31 January 2006, Rome, Italy, www.oecd.org/dataoecd/16/44/36138608.pdf.

Gasser, U. and S. Ernst (2006), 'From Shakespeare to DJ Danger Mouse: A Quick Look at Copyright and User Creativity in the Digital Age', Berkman Center for Internet and Society Research Publication No. 2006-05, June 2006.

Giles, J. (2005), Internet encyclopaedias go head to head, *Nature*, 15 December, www.nature.com/nature/journal/v438/n7070/full/438900a.html.

Gill, K. (2004), 'How Can We Measure the Influence of the Blogosphere', http://faculty.washington.edu/kegill/pub/www2004_blogosphere_gill.pdf.

Gill, K. (2005), 'Blogging, RSS and the Information Landscape: A Look at Online News', http://faculty.washington.edu/kegill/pub/gill_www2005_rss.pdf.

Ginsburg, J.C. (2002), 'Essay - How Copyright Got a Bad Name For Itself' (October 18, 2002). Columbia Journal of Law and the Arts, Vol. 26, No. 1, 2002, http://ssrn.com/abstract=342182.

Gordon, W. J. (1982), 'Fair Use as Market Failure: A Structural and Economic Analysis of the Betamax Case and its Predecessors', 82 Colum. L. Rev. 1600.

Guibault, L. (1998), Discussion paper on the question of Exceptions to and limitations on copyright and neighbouring rights in the digital era, Council of Europe, Strasbourg, October 1998, MM-S-PR (98) 7, www.ivir.nl/publications/guibault/final-report.html.

Hugenholtz, B. (1997), 'Fierce Creatures. Copyright Exemptions: Towards Extinction?', keynote speech, IFLA/Imprimatur Conference, 'Rights, Limitations and Exceptions: Striking a Proper Balance', Amsterdam, 30-31 October 1997, www.ivir.nl/publications/hugenholtz/PBH-FierceCreatures.doc.

International Business Machines (IBM) (2007), Navigating the media divide, Innovating and enabling new business models, IBM Institute for Business Value (February).

Jung-a, Song (2006), Korean site tackles might of MySpace, *Financial Times*, 31 August, www.ft.com/cms/s/eacfbf3c-3938-11db-a21d-0000779e2340.html.

Koelman, K. and B. Hugenholtz (1999), Online service provider liability for copyright infringement, WIPO workshop on service provider liability, Geneva, December 9 and 10, 1999, Geneva: World Intellectual Property Organisation, www.ivir.nl/publicaties/hugenholtz/wipo99.pdf.

Kolbitsch, J. and H. Maurer (2006), The Transformation of the Web: How Emerging Communities Shape the Information we Consume, Journal for Universal Computer Science, available at: www.jucs.org/jucs_12_2/the_transformation_of_the/jucs_12_02_0187_0214_kolbitsch.html.

Lessig, L. (2004), *Free culture*, The Penguin Press.

Lenhart, A (2005), 'Teen Content Creators and Consumers, The PEW Internet and American Life Science Project', November, available at: www.pewInternet.org/pdfs/PIP_Teens_Content_Creation.pdf.

Lenhart, A. and S. Fox (2006), 'Bloggers: A portrait of the Internet's new storytellers', Pew Internet and American Life Project, 19 July, available at: www.pewInternet.org/pdfs/PIP%20Bloggers%20Report%20July%2019%202006.pdf.

Lenhart, A. and M. Madden (2007), 'Social Networking Websites and Teens: An Overview', Pew Internet and American Life Project, 7 January, www.pewinternet.org/PPF/r/198/report_display.asp.

Litman, J. (2000), Digital copyright: protecting intellectual property on the Internet, Amherst: Prometheus Books.

Litman, J. (2006), 'Lawful persona use', paper #06-004, John M. Olin Center for Law & Economics, University of Michigan, http://ssrn.com/abstract=926575.

Magid, L. and A. Collier (2006), MySpaceUnraveled, www.myspaceunraveled.com/

Matlack, C. (2005a), Let Them Eat Cake – And Blog About It, *Business Week*, 11 July, www.businessweek.com/magazine/content/05_28/b3942082_mz054.htm.

Matlack, C. (2005b), The Podcast Shaking Up French Politics, *Business Week*, 27 December, www.businessweek.com/bwdaily/dnflash/dec2005/nf20051227_3765_db039.htm.

Mayer-Schoenberger, V. and J. Crowley (2005), 'Napster's Second Life - The Regulatory Challenges of Virtual Worlds', Harvard Kennedy School Faculty Working Paper, 28 July, available at: http://ksgnotes1.harvard.edu/Research/wpaper.nsf/rwp/RWP05-052.

Merrill, D. (2006), Mashups: The new breed of Web App, IBM developer Works, 8 August, www.ibm.com/developerworks/library/x-mashups.html.

Ministry of Information and Communication (2005), Survey on the Computer and Internet Usage: Executive Summary, National Internet Development Agency of Korea, available at: http://isis.nic.or.kr/report_DD_View/upload/user_sum_eng_200512.pdf

Ministry of Internal Affairs and Communication of Japan (MIC) (2006), White paper on Information and Communications in Japan 2006: Ubiquitous Economy, available at: www.soumu.go.jp/joho_tsusin/eng/whitepaper.html.

Minoura, Y. (1999), Human Development and Education in Digital Revolution, Paper 6 September 1999, Ochanomizu University, www.childresearch.net.

National Computerization Agency of Korea (NIC) (2006), '2006 Informatization White paper', Seoul: NIC, Korea.

National Internet Development Agency of Korea (2006), Korea Internet White Paper 2006, www.mic.go.kr/eng/index.jsp.

Nutall, C. (2006), The hidden flaw in web 2.0, Financial Times, 8 August, www.ftd.de/karriere_management/business_english/104483.html.

OECD (2004a), *OECD Information Technology Outlook 2004,* Chapter 5, 'Digital Delivery', OECD Paris.

OECD (2004b), The Implications of Convergence for Regulation of Electronic Communications, DSTI/ICCP/TISP (2003)5/FINAL, www.oecd.org/dataoecd/56/24/32983964.pdf.

OECD (2005a), *Science, Technology Industry Scoreboard*, OECD Paris.

OECD (2005b), 'Digital Broadband Content: Music', DSTI/ICCP/IE(2004)12/FINAL, www.oecd.org/sti/digitalcontent.

OECD (2005c), 'Digital Broadband Content: Scientific Publishing', DSTI/ICCP/IE(2004)11/FINAL, www.oecd.org/sti/digitalcontent.

OECD (2005d), 'Digital Broadband Content: The Online Computer and Video Game Industry', DSTI/ICCP/IE(2004)13/FINAL, www.oecd.org/sti/digitalcontent.

OECD (2005e), 'Digital Broadband Content: Mobile Content – New Content for New Platforms', DSTI/ICCP/IE(2004)14/FINAL, www.oecd.org/sti/digitalcontent.

OECD (2006a), OECD and Italian Minister for Innovation and Technologies International Conference on *The Future Digital Economy: Digital Content Creation, Distribution and Access*, Rome, Italy, 30-31 January, www.oecd.org/sti/digitalcontent/conference.

OECD (2006b), *OECD Information Technology Outlook 2006*, www.oecd.org/sti/ito.

OECD (2006c), 'Digital Broadband Content: Digital Content Strategies and Policies', DSTI/ICCP/IE(2005)3/FINAL, www.oecd.org/sti/digitalcontent.

OECD (2006d) 'Multiple play. Pricing and policy trends', DSTI/ICCP/TISP(2005)12/FINAL. www.oecd.org/dataoecd/47/32/36546318.pdf.

OECD (2006e), 'Policy considerations for audio-visual content in a multiplatform environment', DSTI/ICCP/TISP(2006)3.

OECD (2006f), 'Report on Disclosure Issues Related to the Use of Copy Control and Digital Rights Management Technologies', www.oecd.org/dataoecd/47/31/36546422.pdf.

Ofcom (2006), The Communication Market 2006, London: Office of Communications.

O'Reilly, T. (2005), What Is Web 2.0 Design Patterns and Business Models for the Next Generation of Software, 30 September, under :www.oreillynet.com/lpt/a/6228 and www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html.

Raine, L. and M. Madden (2005), Podcasting catches on, Pew Internet, 3 April, available at: www.pewInternet.org/pdfs/PIP_podcasting.pdf.

Regner, T., Barria, J. A., Pitt, J. and Neville, B. (2006), 'Is Copyright Suitable for User-Generated Content? An Alternative Approach', October 2006, http://ssrn.com/abstract=936873.

Rose, K. (2006), Calcanis, 27 July, http://krose.typepad.com/kevinrose/2006/07/calacanis.html.

Sandoval, G. (2006a), Microsoft lands Facebook ad deal, CNet News.com, 22 August, http://news.com.com/2100-1024_3-6108514.html.

Sandoval, G. (2006b), CNN Snatching Page out of You Tube's Book, CNET News.com, 30 July 2006, http://news.com.com/CNN+snatching+page+out+of+YouTubes+book/2100-1025_3-6100139.html.

Sang-Hun, Choe (2006), In South Korea, online rumours can hit hard, International Herald Tribune, 14 August, www.iht.com/articles/2006/08/14/news/korea.php.Senftleben, Martin (2004), Copyright, Limitations and the Three-Step Test - An Analysis of the Three-Step Test in International and EC Copyright Law, The Hague/London/New York: Kluwer Law International.

Shimo, A. (2006), Living it up in a parallel world, Globe and Mail, 29 July, www.theglobeandmail.com/servlet/story/LAC.20060729.SECOND29/TPStory/Entertainment.

Sifry, D. (2006a), State of the Blogosphere April 2006, 17 April, www.sifry.com/alerts/archives/000432.html.

Sifry, D. (2006b), State of the Blogosphere August 2006, 7 August, www.sifry.com/alerts/archives/000436.html.

Statistics Canada. (2006), Our Lives in Digital Times, by George Sciadas, Science, Innovation and Electronic Information Division (SIEID) www.statcan.ca/english/research/56F0004MIE/56F0004MIE2006014.pdf.

Van Duyn, A. (2006), Web ads sector lacks experienced staff, Financial Times, 29 August, www.ft.com/cms/s/e2a439cc-378b-11db-bc01-0000779e2340.html.

Van Duyn A. and R. Waters (2006), Google in $900m ad deal with MySpace, Financial Times, 7 August, www.ft.com/cms/s/17e8e67e-2660-11db-afa1-0000779e2340.html.

Von Hippel, E. (2005), Democratizing Innovation, London: MIT Press.

Wikipedia (2006), Wikipedia Statistics, http://stats.wikimedia.org/EN/Sitemap.htm, accessed 31 July 2006.

WIPO (2003), WIPO Study on limitations and exceptions of copyright and related rights in the digital environment, Standing Committee on Copyright and Related Rights, Ninth Session, Geneva: World Intellectual Property Organisation, June 23 to 27, 2003, prepared by Mr. Sam Ricketson.

WIPO (2004), WIPO Study on Current Developments in the Field of Digital Rights Management", prepared by Jeffrey P. Cunard, Keith Hill and Chris Barlas (SCCR/10/2.Rev., May 2004).

WIPO (2005), Online Intermediaries and Liability for Copyright Infringement", WIPO Paper prepared by Charlotte Waelde and Lilian Edwards, for a WIPO Seminar on Copyright and Internet Intermediaries, Geneva, April 18, 2005, www.wipo.int/meetings/2005/wipo_iis/en/.

WIPO (2006a), Trademarks and their relation with literary and artistic works, Standing Committee on the Law of Trademarks, Sixteenth session, Geneva: World Intellectual Property Organisation, November 13 to 17, 2006, SCT/16/5 (September 1, 2006).

WIPO (2006b), Study on 'Automated Rights Management and Copyright Exceptions and Limitations', SCCR/14/5 (May 2006), prepared by Nic Garnett, Geneva: World Intellectual Property Organisation.

Young, K. S. (1996), Internet Addiction: The Emergence of a new clinical disorder. University of Pittsburgh at Bradford. In *Cyber Psychology and Behaviour*, Vol. 1 No. 3, pages 237-244.

NOTES

1   See chapter 7 of the *OECD Information Technology Outlook 2006.*

2   For an overview of the WPIE's work programme on digital content see www.oecd.org/sti/digitalcontent.

3   This work has substantially benefited from research conducted by Elizabeth Stark (consultant, United States).

4   It must be noted that the participative web implies a much broader phenomenon than just user-created content. Certainly the technologies arising from the participative web and their characteristics allowing for interaction, blogging and other activities have been particularly conducive to the creation of UCC. Yet usually the definitions of the participative web phenomenon (see, for example, O'Reilly, 2002, 2005) typically include a broader set of developments, including for example the rise of new commercial web services or other commercial ventures.

5   UCC is referred to as consumer-generated media in publications from Japanese official sources, see www.johotsusintokei.soumu.go.jp/whitepaper/eng/WP2006/chapter-1.pdf.

6   Definition at http://en.wikipedia.org/wiki/User_generated_content.

7   It shall be noted here that posting chat messages or using file-sharing services per se do not necessarily qualify as UCC as per the definition introduced in paragraph 9 ff. The distinction between UCC (e.g. a blog) and just any type of chat content is a very difficult and subjective matter. File-sharing sites can be used for the exchange of UCC as well as other types of (copyrighted) content - sometimes without the authorisation of copyright holders.

8   For a survey with details on French blogging demographics see the Credoc (2006) survey 'La diffusion des technologies de l'information dans la société française', www.arcep.fr/uploads/tx_gspublication/etude-credoc2006.pdf.

9   According to the survey, for girls social networking sites are primarily places to reinforce pre-existing friendships; for boys, the networks also provide opportunities for flirting and making new friends. Source submitted by the Singaporean delegation. 'Microsoft survey: Blogging Phenomenon Sweeps Asia, According to New Research from Windows Live Spaces', in: *Xinhua-PRNewswire* (28 November 2006) based on Microsoft surveys of its MSN and Windows Live Online Services Business.

10   Available at www.oecd.org/dataoecd/15/17/36133687.pdf.

11   See www.soumu.go.jp/joho_tsusin/eng/Releases/Telecommunications/pdf/news050517_2_1.pdf.

12   Data on web traffic is an increasingly reliable and up-to-date source of usage information (see OECD, 2004a, Chapter 5). See also the presentation of David Day, Managing Director, EMEA Nielsen//NetRatings to the OECD-Italian government Digital Content conference at www.oecd.org/dataoecd/16/16/36134913.pdf.

13   Alexa traffic rankings at www.alexa.com/site/ds/top_500.

14   Remarks of Tony Perkins at 'The AlwaysOn Network's On Hollywood 2006' conference in May 2006. See 'Future of Entertainment: Democratic party', in: *Hollywoodreporter* (26 September 2006) at www.hollywoodreporter.com/hr/content_display/tools_data/media_analyst_corner/e3i%2FWNldeNUbIvVQ4t3MKmReg%3D%3D.

15   According to the *OECD Key ICT indicators*, Japan leads the OECD in fibre-to-the-premises with 6.3 million fibre subscribers in June 2006. See www.oecd.org/sti/ictindicators.

16   Really Simple Syndication.

17   See presentation of Creative Commons to the OECD-Italian government Digital Content conference at www.oecd.org/dataoecd/15/31/36134387.pdf.

18   Data from Interpublic's Emerging Media Lab. According to Nielsen//NetRatings, men are 20 percent more likely to visit YouTube than women. See http://netratings.com/pr/pr_060721_2.pdf.

19   Anderson (2004).

20   'U.S. venture investors betting on energy, Web 2.0', in: *Reuters* (23 October 2006).

21   Every Creative Commons licence allows others to copy and distribute a work provided that the licensee credits the author/licensor. In addition, the Creator/Licensor may apply different conditions (Non commercial, No Derivatives, Share Alike – the latter allowing you to alter, transform or build upon the work while sharing the resulting work under the same licensing). Licensed content can be explored, search is improved and re-use is promoted.

22   See also Kolbitsch and Maurer (2006).

23   Now known as Kodak EasyShare Gallery.

24   Remixing can take the form of 'mash-up," whereby two or more songs are edited together to create a resulting mélange. Another related derivative use is sampling, whereby snippets of a song or other audio file are taken and added to another, often in a modified form. An example would be a song taking Martin Luther King's 'I have a dream" speech, rearranging it, and setting it alongside music.

25   See www.davidbowie.com/neverFollow/.

26   The Phantom Edit is an alternate version of writer-director George Lucas' 'Star Wars I: The Phantom Menace'. In addition, user-created videos may also involve animation, where users create or remix animated material. Further, 'machinima" is UCC where characters and stories are created within computer games, recorded, and then posted online as short films.

27   For instance, in many OECD countries online shoppers consider ratings and reviews, to be a key element in their research process when shopping for a new vehicle.

28   Honda has sponsored a site on the blogging network 2Talk About, where users can give their views on the company's products.

29   See, for example, www.bullpoo.com/explore/.

30   See the debate 'User-generated Content - What Does it Mean for Consumers and Marketers' as part of the FTC's hearings on Protecting Consumers in the Next Tech-ade!, in November 2006, http://ftcchat.us/blog/?p=56#more-56.

31   The difficulties measuring blogs are discussed in OECD (2006b), Chapter 7.

32   See for more details OECD (2006b), Chapter 7. The number of Japanese and Korean blogs is striking due to the fact that it is disproportional with the general use of the Internet.

33   Submitted by the Singaporean Delegation. 'Microsoft Windows Live survey: Blogging Phenomenon Sweeps Asia', in: *Xinhua-PRNewswire* (28 November 2006) based on Microsoft's MSN and Windows Live Online Services Business.

34   Writely and Writeboard enable users to log in and collaborate on documents in a word processing-based environment.

35   Digg currently has nearly 500 000 users, with 30% of homepage links coming from the Top 100 users alone (Rose, 2006).

36   Similarly, OpenBC/Xing, LinkedIn and Spoke are professional networking services that attempt to create a networking site or platform for experts and business partners.

37   See http://video.google.com/videoplay?docid=-5182759758975402950 for a more detailed and technical explanation of Second Life.

38   See www.SecondLife.com and Shimo (2006). It is reasonable to assume that these figures do not refer to unique users as persons can create multiple accounts for different residents. Also, some persons register a virtual avatar but never or rarely use it. These types of figures thus often overestimate the unique audience of the virtual world.

39   Google, for instance, also owns the social networking site Orkut or the wiki-builder Jotspot.

40   See for instance, http://wikimediafoundation.org/wiki/Personal_Appeal.

41   In the case of Flickr, for instance, 'pro' means an ad-free service for providers of photos, as well as unlimited bandwidth, storage, and other features. Feedburner, a widely used blogging software provider offers additional paid services to create awareness for the blog, to optimise and embellish display, to track and monitor usage patterns, to manage excess traffic and even to monetise the blog via participation in the FeedBurner Ad Network.

42   For a full explanation of Google's business model see https://www.google.com/adsense/afc-online-overview. or http://en.wikipedia.org/wiki/AdSense.

43   In Second Life, users and firms can advertise through the buying of land and the building of firm-specific buildings, locations or shops. In theory, they can also create standard advertisements on their land.

44   In other words, by posting the content the sites receives a limited irrevocable, perpetual, non-exclusive, transferable, fully paid-up, worldwide license (with the right to sublicense) to use, modify, publicly perform, publicly display, reproduce, and distribute such content through the particular site.

45   See http://us.cyworld.com/mall/index.php for the English language version CyWorld mall and http://cyworld.nate.com/mall/mall5_index.asp for the Korean gift shop.

46   This excludes possible impacts on businesses from the internal or external use of participative web technologies themselves (e.g. companies disseminating news internally over a blog).

47   Data obtained from the Consumer Electronics Association. See 'Consumer electronics growth to continue through 2007 according to new CEA Forecast 2005", press release 14 August 2006 and CEA study on US household ownership of Consumer electronics products. The Consumer Electronics Association forecasts total factory-to-dealer sales in the United States to reach $140 billion in 2006, 8% growth over 2005. See http://consumerelectronicsdaily.typepad.com/consumer_electronics_dail/2006/08/ce_market_to_gr.html. See also OECD (2005b) for the impacts of digital content on the consumer electronics industry.

48   'YouTube success to spawn US$2b video ASP boom", in: *IT News* (17 October 2006), www.itnews.com.au/newsstory.aspx?CIaNID=40872.

49   'Your Tube, Whose Dime?", in: *Forbes* (28 April 2006) www.forbes.com/intelligentinfrastructure/2006/04/27/video-youtube myspace_cx_df_0428video.html.

50   See Limelight financial investors release at www.limelightnetworks.com/news/pr.2006.07.20.html.

51   As of May 2005, Japan had around 115 providers (including small and medium sized firms) providing blog services and 75 providers of SNS. See www.soumu.go.jp/joho_tsusin/eng/Releases/Telecommunications/pdf/news050517_2_1.pdf.

52   Other findings of the 'Generator Motivations Study' of the Interpublic Emerging Media Lab at http://ipglab.com/ include that as many as 73% of content generators notice Internet advertising, a much higher share than in the male 18-24 year-old demographic as a whole. Also, 57% of all content creators surveyed said they are willing to feature brands in their videos, and many within the group have already

done so. Sixty-two percent are motivated by gaining personal recognition, while 60% are driven by cash compensation.

53   See http://hcs.harvard.edu/cyberlaw/syllabus/dmx.pdf for more explanations. Paul Hoffert (DMX) presented the project to the OECD in February 2006.

54   This system faces certain possible problems: leakage of music from the DMX onto traditional P2P networks, a form of click fraud as artists have other downloading their content to generate them revenue.

55   This model, however, requires that a user must be online while viewing the content to generate advertisement revenue. It does not work well for videos that are downloaded and then viewed later offline or on a portable audio/video player.

56   The International Herald Tribune, for instance, signed a deal in May 2006 to syndicate content from the Korean citizen journalism site OhmyNews.

57   'Korea: SK Com. to launch new search engine", in: *Korea Times* (23 October 2006).

58   See http://dovecreamoil.com/.

59   Budweiser, for instance, allows users to put words in the mouth of celebrities or animals to send as postcards. See http://veepers.budweiser.com/service/Start.

60   Examples are the folk singer Sandi Thom and Artic Monkeys.

61   Coca-Cola and iTunes have recently announced a webpage to foster young musical talent (upcoming artists can send their music to a selection committee for airing).

62   See www.desiresdavenir.org/. Socialist candidate Segolene Royal made her Web site a vital part of her campaign, practicing what she calls 'participative democracy.'

63   See http://blog-ump.typepad.fr/.

64   See www.loiclemeur.com/english/2005/12/nicolas_sarkozy.html.

65   Collaborative educational initiatives such as MIT OpenCourseWare are providing opportunities for educators and students alike to make use of these resources and improve the overall level of education. The University Channel podcast – a project of Princeton University - makes videos of academic lectures available.

66   See on the changing role played by broadcasters in shaping politics and the democratic process, the ongoing conferences and seminars. 'Beyond Broadcast 2006: Reinventing Public Media in a Participatory Culture' held at Harvard Law School on February 24th, see http://cms.mit.edu/.

67   The analysis is based on analysis of the terms of service and the Privacy Policy of the following sample of 15 widely- and internationally-used UCC sites: Flickr, Ofoto, BoingBoing, Digg, del.icio.us, Bebo's, Cyworld, Face Book, Friendster, MySpace, orkut, Daily Motion, Google Video, You tube and Second Life. The tables are a generalisation of the terms of services of these sites. Other UCC sites (especially non-English speaking ones) may have different terms of service. Terms of services vary according to local legal frameworks and local cultures.

68   The final provision of the OECD Council Recommendation on Broadband Development is the '[e]ncouragement of research and development in the field of ICT for the development of broadband and enhancement of its economic, social and cultural effectiveness".

69   See also the OECD-BIAC Workshop on Future of Online Audiovisual Services, Film and Video: Issues for Achieving Growth and Policy Objectives, September 29, 2006, Summary, DSTI/ICCP/CISP/IE(2006)2, www.oecd.org/dataoecd/33/42/37866987.pdf.

70   See also related comments and suggestions by the UK regulator OFCOM supporting that audiences be able to re-use content, at http://www.ofcom.org.uk/media/news/2007/01/nr_20070124a.

71 See also the OECD Council Recommendation on Broadband Development at www.oecd.org/dataoecd/31/38/29892925.pdf.

72 Finally, regulators will have to monitor whether their current approaches for guaranteeing competition in the telecommunication market will be adequate for new NGN environments. See the OECD NGN Forum www.oecd.org/document/12/0,2340,en_2649_34223_37392780_1_1_1_1,00.html.

73 This technological choice is based on the historical Internet use patterns which did not show a great need for upload capacity at the user-level.

74 As suggested by the OECD Council Recommendation on Broadband Development at www.oecd.org/dataoecd/31/38/29892925.pdf.

75 See also the OECD-BIAC workshop, in footnote 72.

76 From an economic perspective, copyright is designed to provide monopoly rights to authors to recompense their creative effort in return for enabling their works to be widely appreciated and to encourage further creativity.

77 The requirement of originality can be understood as a reference to the uniqueness of works resulting from the personal and individual character of the process of creation (WIPO, 2006a).

78 See Article 6bis of the Berne Convention for the Protection of Literary and Artistic Works.

79 WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT) at www.wipo.int/copyright/en/treaties.htm.

80 Comments from Prof. Dr. Urs Gasser, and Dr. Martin Senftleben on this section are appreciated.

81 So-called derivative works are based on or derived from a pre-existing work (i.e. works which are not in the public domain). See www.copyright.gov/circs/circ1.html.

82 See http://fairuse.stanford.edu/Copyright_and_Fair_Use_Overview/chapter9/index.html.

83 Article 9(2).

84 WIPO Copyright Treaty (Article 10) and WIPO Performances and Phonograms Treaty (Article 16), and Agreement on Trade-Related Aspects of Intellectual Property Rights TRIPS (Article 13).

85 Agreed Statements concerning Article 10 of the WIPO Copyright Treaty adopted by the Diplomatic Conference on December 20, 1996

86 17 U.S.C. 107, U.S. Copyright Act (found in Title 17 of the United States Code).

87 Ibid.

88 Australian Copyright Act, Division 3, Art. 40 ff.

89 UK Copyright, Designs and Patents Act 1988, Chapter III.

90 C.f. EUCD Article 5, para. 3 and 4. Exceptions are valid for (i) teaching or scientific research, (ii) for the benefit of people with a disability, (iii) reproduction by the press, communication to the public or making available of published articles/broadcasts on current economic, political or religious topics or of broadcast works or other subject-matter of the same character, (iv) quotations for purposes such as criticism or review, (v) use for the purposes of public security or to ensure the proper performance or reporting of administrative, parliamentary or judicial proceedings, (vi) use of political speeches as well as extracts of public lectures or similar works or subject-matter to the extent justified by the informatory purpose and provided that the source, including the author's name, is indicated, except where this turns out to be impossible, (vii) use during religious celebrations or official celebrations organised by a public authority; (viii) use of works, such as works of architecture or sculpture, made to be located permanently in public places; (ix) incidental inclusion of a work or other subject-matter in other material, (x) use for the purpose of advertising the public exhibition or sale of artistic works, to the extent necessary to promote the event, excluding any other commercial use, (xi) use for the purpose of caricature, parody or pastiche, (xii) use in connection with the demonstration or repair of equipment; (xiii) use of an artistic work in the form of a

building or a drawing or plan of a building for the purposes of reconstructing the building (xiv) use by communication or making available, for the purpose of research or private study, (xv) use in certain other cases of minor importance where exceptions or limitations already exist under national law.

91   EUCD, Article 5. See (Senftleben, 2004) for more on this topic.

92   See Japanese Copyright Act, Subsection 5, Korea Copyright Act, Section 6.

93   Korea Copyright Act, Section 6, Article 26 (Public Performance and Broadcasting for Non-Profit Purposes): (1) It shall be permissible to perform publicly or broadcast a work already made public for non-profit purposes and without receiving any benefit in return from audience, spectators or third persons: Provided, That this shall not apply to cases where the stage performers are paid any normal remunerations. (2) It shall be permissible to reproduce and play for the general public any commercial phonograms or cinematographic works, if no benefit in return for the relevant public performance is received from audience or spectators: Provided, that this shall not apply to the case as prescribed by the Presidential Decree. Japanese Copyright Act, Subsection 5, Japan: Article 38 (Public Performance and Broadcasting for Non-Profit Purposes. i.e. works can be performed or exhibited freely if the performer is not remunerated, and the audience is not charged an admission fee Article 38. of Japanese Copyright Act (Performances, etc. not for profit-making purposes) (1) It shall be permissible to publicly perform, present and/or recite a work already made public, for non-profit-making purposes and if no fees are charged to the audience or spectators ('fees' includes consideration of any kind whatsoever for the offering and the making available of a work to the public; the same shall apply below in this Article), to audiences or spectators. The foregoing, however, shall not apply when the performers or reciters concerned are paid any remuneration for such performance, presentation or recitation.

94   See, for example OECD (2006a) for related discussions and follow-up discussions of the World Summit on the Information Society at the Inaugural Internet Governance Forum Meeting Athens, Greece, 30 October - 2 November 2006, Content Rights for the Internet Environment, www.intgovforum.org/Athens_workshops/Content%20Rights%20workshop%20report.pdf.

95   Viviane Reding Member of the European Commission responsible for Information Society and Media, Speech on the 'The Disruptive Force of Web 2.0: how the new generation will define the future", Youth Forum, ITU Telecom World Hong Kong, China, 3 December 2006, SPEECH/06/773 (4 Dec 2006), http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/06/773&format=HTML&aged=0&language=EN&guiLanguage=en.

96   See www.chillingeffects.org for an attempt to take stock of such notices.

97   See also Regner et al (2006) on flexible platforms for free content created by users.

98   In other words, by posting the content the sites receives a limited irrevocable, perpetual, non-exclusive, transferable, fully paid-up, worldwide license (with the right to sublicense) to use, modify, publicly perform, publicly display, reproduce, and distribute such content through the particular site.

99   For instance, Universal Music recently filed a lawsuit against Grouper and Bold (two video sharing sites) for violation of their copyright arguing that the latter services host their content without authorisation. In some cases, such lawsuits or related concerns have led to video-sharing sites removing videos from the sharing site.

100   See for an example of such take down notice procedures for a user-created content site: http://secondlife.com/corporate/dmca.php.

101   Section 512(c) of the US Digital Millennium Copyright Act.

102   Section 512(a) of the US Digital Millennium Copyright Act

103   Section 39B of the Australian Copyright Bill.

104   EUCD Article 12. It is implied that the online intermediary's 'activity is of a mere technical, automatic and passive nature, which implies that the information society service provider has neither knowledge of nor control over the information which is transmitted or stored' (EUCD Recital 42).

[105] EUCD Art. 15.

[106] EUCD Recitals 40 and 46.

[107] EUCD Art. 16.

[108] In March 2005, the Italian government has promoted the so-called San Remo charter for the adoption of a coordinated set of codes of conduct by the content industry, ISPs, network operators, manufacturers and rights owners, to foster the availability of quality in a secure environment, and to organise and promote educational campaigns in particular amongst youth to ensure the respect of digital rights. See for France, the Charte d'engagements pour le développement de l'offre légale de musique en ligne, le respect de la propriété intellectuelle et la lutte contre la piraterie numérique, www.culture.gouv.fr/culture/actualites/conferen/donnedieu/charte280704.htm. For the EU level see the European Charter for Film Online at http://ec.europa.eu/comm/avpolicy/docs/other_actions/film_online_en.pdf.

[109] United States Supreme Court Decision in MGM Studios, Inc. v. Grokster, Ltd. 545 U.S. 913 (2005) at http://caselaw.lp.findlaw.com/cgi-bin/getcase.pl?court=US&navby=case&vol=000&invol=04-480.

[110] C.f. WIPO (2005).

[111] See http://blogs.law.harvard.edu/palfrey/2007/02/02/viacoms-cease-and-desist-letters-for-a-home-video/.

[112] As they may permit for the adequate protection of content, DRM may facilitate the creation and dissemination of creative works. Content creators (including users) and publishers can use DRM to protect their work from unauthorised downloading, viewing and from the potential creation of derivative works. This potentially encourages the content rightholders to make content available for digitisation and subsequent digital sale. DRM also allows the creation of certain new business models. Through their ability to create diverse access schemes to content, DRMs may enable content offerings that are more tailored to consumer demand (e.g. the right to purchase time-limited access to songs) and that may – if prices reflect the level of access – increase consumer choice and satisfaction.

[113] US Copyright Office, 37 CFR Part 201 Docket No. RM 2005-11, Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, details at www.copyright.gov/fedreg/2006/71fr68472.html.

[114] The Geneva Declaration of Principles and the Tunis Commitments of the World Summit on the Information Society refer to and underline the importance of freedom of expression and the free flow of information, ideas and knowledge. The identification of the appropriate enabling legal, policy and regulatory frameworks that preserve openness as one of the key founding principles of the Internet may be strived for.

[115] Submitted by the Singaporean delegation. 'Microsoft survey: Blogging Phenomenon Sweeps Asia, According to New Research from Windows Live Spaces', in: Xinhua-PRNewswire (28 November 2006) based on Microsoft surveys of its MSN and Windows Live Online Services Business.

[116] For instance, this is also the form chosen by Wikipedia.

[117] See Kolbitsch and Maurer (2006).

[118] Debated in the context of the revision of the UK Violent Crime Reduction Bill. See Move to ban happy-slapping on the web, *The Guardian* (21 October 2006).

[119] Even this is not perfect, though, as one could obtain access to such an address and start a profile.

[120] Certain user-created content services have also implemented special zones for underage users (e.g. Teen grid for 13-17 year olds in Second Life).

[121] In Korea, the posting of pictures and videos concerning the behaviour of some person has led to a form of 'public shaming'.

[122] See www.oecd.org/sti/security-privacy for OECD work on privacy and ICT security.

[123] Since the early 1990s, several clinics have been established in the United States to treat heavy Internet users. They include the Center for Internet Addiction Recovery, in Bradford, Pa., and the Connecticut-based Center for Internet Behavior.

[124] These have also been discussed in the context of online games in OECD (2005d).

[125] 'Developing teaching curriculum to disseminate a sound Internet culture", *Korea Herald* (15 September 2006), www.asiamedia.ucla.edu/article-eastasia.asp?parentid=5298.

[126] Survey of 3 000 Internet users. See www.itu.int/wsis/stocktaking/scripts/documents.asp?project=1120746255&lang=en.

[127] See Republic of Korea - Ministry of Information and Communication (MIC) Activity: The Center for Internet Addiction Prevention and Counselling www.itu.int/wsis/stocktaking/scripts/documents.asp?project=1120746255&lang=en and www.asiamedia.ucla.edu/article-eastasia.asp?parentid=52984.

[128] Statistics Canada (2006) notes that, '[t]hus, it is not that people are becoming anti-social; it is that people are becoming differently social.'

[129] 'Splogs', a combination of blog and spam, are weblog sites with faked articles which the author uses only for promoting affiliated websites or other content, such as stocks.

[130] According to Technorati, approximately 8% of all new blogs created are spam, with short-term spikes as high as 30%.

[131] See www.oecd.org/sti/spam for the work of the OECD on spam and the OECD Report of the OECD Task Force on Spam: Anti-spam Toolkit of recommended policies and measures, page 21 ff. at www.oecd.org/dataoecd/63/28/36494147.pdf.

[132] This tag, which can be utilised in blog comments, would not raise a particular site's ranking within a search engine when it is linked to by spammers.

[133] See Joint Economic Committee of the US Congress. www.businessweek.com/innovate/content/may2006/id20060502_832540.htm and article in Washington Post at http://tinyurl.com/ve34c. The authors thank our colleague David Holmes (OECD Centre for Tax Policy and Administration) for useful discussions concerning this topic.

[134] For OECD work on taxation and ecommerce see www.oecd.org/topic/0,2686,en_2649_33741_1_1_1_1_37427,00.html.

[135] Japan has presented the results of its Annual Survey of Digital Content at the December 2006 session of the OECD Working Party on the Information Economy and called on international collaboration in this area.