

Creative Freedom In the Digital Age



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Creative Freedom In the Digital Age

A Doctoral Thesis submitted in partial fulfilment of the requirements
for the award of Doctor of Philosophy
of Loughborough University

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Loughborough University

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Keywords:

Everyday Creativity

Digital Technology

Web 2.0

Participation

User-Generated-Content

Amateur Photography

Free/Libre/Open Source Software

The GIMP

Abstract

The growing ubiquity of digital technologies and the Internet initiated radical transformations in how media is produced, consumed and distributed. In response to this shift, new economic models emerged, that support and rely on the aggregation of individual contributions and collective effort. The digital environments enabled through the participatory architecture of Web 2.0 are used by a growing number of people as spaces for cultural production, participation and communication. This initiated a shift from passive audience to active production, from individual to collaborative effort, and from personal to social and shared spaces. Web 2.0 made it much easier for laypersons to produce and publish digital content and to participate in online communities. However, democratisation of content production and distribution means that not every user is turned into a producer and does not automatically bring liberating power to the people. This is a complex process that stretches over social, political and economic areas of contemporary society.

The new web economy based on user contribution is often criticised by scholars and media experts (Van Dijck, 2009; Keen, 2007, Fuchs, 2013). Exploitation of free user labour for commercial purposes, lack of control over uploaded data by the users, unequal distribution of power and visibility these are the main points of critique of proprietary online services and networks. Raising awareness about the ownership of user data and the differences between the commercial and user-led communities among Internet users can facilitate a more conscious approach to participation in social networks and virtual communities as well as to the uploading of personal data.

The participatory turn in the consumption of culture and the growing ubiquity of communication and information technologies gave birth to the rise of amateurism and the emergence of the new types of amateur production (e.g. 'crowdsourcing', 'produsage'). In some areas, online communities of highly motivated amateurs (Pro-Ams) work to professional standards and even achieve better results than their professional colleagues. Open Source software projects or Wikis are among areas that rely on committed amateurs and the strength of a community.

The collaborative nature of digital technologies and the rise of social media have raised much interest in communities of practice. The situated learning theory (Lave and Wenger, 1991) that was developed in the pre-Internet era places

learning in social relationships of co-participation. As in conventional communities, in online communities learning can take place through direct mentorship and through participation. Through the active use of digital networked technologies and participation in virtual communities of practice, users acquire digital competencies and domain-relevant skills that enable them to produce and publish digital content themselves. In this thesis, Free and Open Source Software community and Flickr, the photographic communities are provided as examples of communities of practice.

The production and distribution of audiovisual content and especially photographic images is an integral part of modern communication and social networking. With the democratisation of photography - and especially with the rise of digital technologies - there is a growing demand for tools that can be used by non-professionals to optimize their pictures. In this thesis, free and open source software for creativity support is suggested as a free and powerful alternative to expensive commercial products. The users can also benefit from freely available resources for individual learning as well as the peer-support and the user-community.

The empirical stage of the research comprises two studies that aim to investigate the role of ICT and the Internet in everyday creative activities. The 509 survey participants were acquired through the snowball sampling method via e-mail. The survey comprised quantitative and qualitative, open-ended questions aimed at exploring people's attitudes to their personal creativity, their everyday creative activities, the ways in which computers are being used for creative purposes and the reasons for not using digital creativity support tools. The survey also included questions on the use of free software and open source resources in general and for creativity in particular.

The survey revealed that the majority of participants believe themselves to be more or less creative and are involved in everyday creative activities many of which are performed with the use of computers. Survey participants showed a vital interest in using digital tools and acquiring new skills for creativity and participation in online environment. A significant proportion of participants stated that their lack of software-based creativity support tools, as well as the essential skills to use them, formed important barriers to creativity and content production. Despite that some free and open source applications are being widely used, the majority of respondents were unaware of the range of opportunities for digital content handling and creativity available using 'free' and 'open' non-proprietary resources.

A qualitative experiment in a workshop form was conducted as the second empirical study. Taking into account the survey data that revealed digital photo-editing and manipulation to be the most popular creative activity among participants, a powerful, free, image-editing program - the GIMP - was chosen for the experiment. A group of people with no professional knowledge of using image editing programs participated in a single-day workshop where they learned how to do basic image processing with a free software editor, the GIMP. The main goal of this practical training was to make participants familiar with the GIMP and its functionality, to let them try it out in a hands-on experience as well as to provide information about corresponding communities of practice and learning resources so that participants can use the tool independently and apply it to their own creative practices. A qualitative, mixed-method approach has been used in this study in order to achieve the desired objectives. Data collection methods involved questionnaires, observation and follow-up telephone interviews.

The GIMP tutorial and practice session proved to be successful in engaging non-professionals in image manipulation with the GIMP and facilitating further use and learning through individual effort. The tool had been perceived as understandable and suitable for self-learning after a guided introductory session with hands-on training. The session increased the participants' confidence in their abilities and it motivated many to continue using the GIMP and to explore other free and open source applications. Considering that a single workshop had such a positive effect on people's confidence and skills concerning the use of digital technologies for creative tasks, it would be very beneficial if people had such opportunities for learning digital content creation and manipulation.

The benefits of using free resources for everyday creativity arise from their free availability as well as from vital support communities that facilitate self-learning and experience exchange, contribute to acquiring new skills, nurture new-media literacy and, consequently, increase the quality of shared digital content.

Acknowledgements

This is to acknowledge and express my gratitude to the people whose support helped me to cope with completing this thesis. I am grateful for the support and intellectual generosity of my supervisors, Simon Downs and Professor Paul Wells whose confidence in my ideas gave me the strength to plan and carry out a great body of work for this research. I wish to thank Dr. Malcolm Barnard and Mel Jordan for their scholarly guidance and support. This research has become possible through the scholarship granted by the Loughborough School of the Arts. A special thanks to Kerry Walton who offered me this great opportunity of study with financial support. I am grateful to the participants for finding time to fill in the online survey or to participate in the experiment. Thank you to the adult education facility for being the host for my image manipulation workshops.

Most of all, I am deeply indebted to my mother for her love, guidance and counsel over the years, for taking time to review my draft writing, but first of all, for sharing her deep passion and experience in academic research with me. My special thanks are for my husband who helped and encouraged me from the very beginning of that undertaking. His positive energy, love and support have been an engine for my hard work during the academic journey. I am very grateful my children who granted me a hiatus to complete my thesis.

CERTIFICATE OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this thesis, that the original work is my own except as specified in acknowledgments or in footnotes, and that neither the thesis nor the original work contained therein has been submitted to this or any other institution for a degree.



..... (Signed)

11.05.2015

..... (Date)

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Glossary

Blog (weblogs)

Blog is the shorter form of the term 'weblog' that is usually used for websites or parts of websites that individual users publish as online journals displayed in a reversed chronological order. A blog can have any form and utilize any kind of digital media. It can be dedicated to a specific topic or serve as a publishing space for human creativity. Blogs have evolved to be key drivers of news and discussions online due to their simplicity of maintenance and immediacy of output. Most blogs allow other users to post comments or take part in online discussions. The activity of updating a blog is 'blogging' and someone who keeps a blog is a 'blogger'. 'Blogosphere' is the global community that encompasses all existing individual and interconnected blogs on the web. The Blogosphere forms a significant part of the modern online public sphere comprising a network of interlinked communication spaces.

Citizen journalism

Citizen journalism is based on the idea that people without professional journalism training can engage in the process of gathering, reviewing, reporting, analysing and distributing news and information. Citizen journalism stands outside the regulated or politically attached news organisations. This phenomenon has gained a mass dimension through the development of the Internet and online media. According to new-media theorist Terry Flew, three elements contributed to the rise of citizen journalism and citizen media: open publishing, collaborative editing and distributed content. Blogging is the most conventional method of modern citizen journalism.

Crowdsourcing

Crowdsourcing is a distributed problem-solving and production process that involves outsourcing tasks to an undefined network of people, also known as the crowd (Howe, 2006). Crowdsourcing is an inexpensive way to gather a large amount of information or solutions for a problem in a relatively short period of time. The participatory architecture of Web 2.0 contributed to the expansion of crowdsourcing with various online crowdsourcing platforms that offer tools for task management and distribution, e.g. 'Amazon mechanical Turk' that was launched in 2005.

Digital Content

Digital content is information in digital form that is stored in a binary numeric form. Typical examples include music, texts, images and videos that can be accessed online or are available on electronic devices like computers, mobile phones or CDs/DVDs and other digital data storage media.

Digital Inequality

Digital inequality or the digital divide refers to the unequal access to digital information and communication technology that exists among different levels of society. It encompasses physical access to computer technology and the Internet as well as the knowledge and skills required to operate the technology and participate in the online environment according to the social norms of communication.

Everyday Creativity

Everyday creativity is a phenomenon that is inseparable from everyday life. It is grounded in a natural human ability to adjust to circumstances and to search for creative solutions. It affects the majority of social activities that allow individual creative input.

This thesis is particularly concerned with everyday creativity as a social practice that is taking place within the new media technological environment. It comprises the grassroots creative activities that are a natural response to the accessibility of creativity support tools and publishing opportunities offered by the new technologies to the general public. The wide spectrum of such activities ranges from taking and publishing amateur photographs to highly creative works that are posted online and receive social recognition. In this case there is no obvious boundary between leisure and work, amateur and professional. The key criterion is the quality of the published content.

Free Software/Open Source Software

Free software or libre software as opposed to proprietary software can be used, studied, modified, copied and redistributed with no restrictions, or minor restrictions that ensure that the derivative works remain 'free'. The free software movement was conceived in 1983 by Richard Stallman to satisfy the need for, and to give the benefit

of, software freedom to computer users. Free Software is usually available free of charge or for a small fee to download.

The key aspect of open source software is the availability of source code that enables further development and derivative works. Based on the concept of free software, open source software offers more opportunities for collaborative work and more flexible conditions than free software. Open source software generally allows anyone to create modifications of the software, port them to new operating systems and processor architectures, share them with others or, in some cases, market them. The Open Source Initiative (OSI) was formed in February 1998 by Eric S. Raymond and Bruce Perens.

Global Network

In this thesis, the term 'global network' is used to refer to the World Wide Web, e-mail, Peer-to-Peer and other networks used for digital data transfer.

New Media

New media is a broad term that usually comprises digital interactive technologies connected to the Internet. Most new media technologies have the characteristics of being networkable, compressible, manipulable and interactive. Today, the common new-media devices are desktop and laptop computers, mobile phones and smartphones, PDAs and other technologies that enable instant communication over the Internet as well as real-time digital content production, manipulation and online publishing. The participatory aspect of new media that enables user participation in an online environment distinguishes new media from the conventional read-only media for passive consumption like newspapers, magazines and television.

New Media Culture

The term 'new media culture' is used in this thesis to describe a communication culture that arose around new media technologies characterised by an extreme variety of form. The most common examples include social networking, blogging, participating in online communities, creating and manipulating and publishing digital content.

Digital Literacy

Digital literacy is a set of the various literacies that enable an individual to be fully involved in a technology-driven social life. Technological c in media handling; the necessary skills to create, mix, manipulate and publish digital content; awareness of various licences available for digital content and software; the ability to search for information and critically analyse its quality – these are some of the key competencies that belong to digital literacy.

Online Communities

Online communities are virtual communities that exist online usually on the basis of web platforms. Members of online communities socialize ‘virtually’ by interacting with each other, publishing digital content, participating in discussions and writing comments. Recently, social media offers the most convenient way to create and maintain online communities. Such communities show many of the characteristics of geographic communities; functioning as social support networks, sources of information, creators of myths, etc.; but are not defined by physical proximity.

Online Publishing

Online publishing is used to refer to the publishing of digital content (texts, images, music and other digital data) on websites, social media sites and other online platforms.

Open Licences

The term ‘open licenses’ is used in this thesis as a collective term to refer to licences that allow the use, modification and distribution of digital content. Some examples of such licences are the Creative Commons, GNU Free documentation license, GPL – general public license and other permissive licences.

Public Domain

Public domain encompasses ideas, information and other works that are not covered by any intellectual property rights (copyright) and are publicly available for use and modification. Works enter the public domain when their intellectual property rights are forfeited or when the copyright owners contribute their works for public use by using the CC0 license – the ‘no rights reserved’ license of Creative Commons.

Sharing of Digital Content

Sharing in computer and Internet language is the practice of distributing or providing access to any kind of digital content such as computer software, images, music, eBooks or text documents. Sharing can be performed over web-based hyperlinks and peer-to-peer networks as well as online publishing of digital content that can be downloaded by other users. Sharing is the key aspect of the open source and free software movement where the source code is made available for download and further development. This concept is being increasingly applied to other areas of digital content being published under 'open licenses' such as the Creative Commons license.

Social Media

Social Media refers to the participatory Web 2.0-based online platforms that comprise tools for social networking and communication in the form of blogging, instant messaging, content publishing, collaboration and other kinds of user interaction. Some of the most popular social media platforms are Facebook, MySpace, Wikipedia and YouTube.

The Commons

'The Commons' as a term is used to describe resources that are 'held in common' or in other words collectively owned or shared between communities or the entire population. In the scope of this thesis the term is used to refer to digital content in the form of computer software, texts, images, videos and music published under 'open licenses' and in this way available in the public domain.

Users

Users in the context of this thesis are people who use information and communication technology in the form of computers and portable/mobile digital devices. Users are also people who use offline and online computer programs and software tools.

User-generated Content

The term user-generated content (UGC) is used to describe any form of content such

as video, blogs, discussion forum posts, digital images, audio files and other forms of media created and published by users of an online system or service that is publically available to other users.

Web 2.0

The term Web 2.0 was coined by Tim O'Reilly in 2004 to describe the second generation of the web that facilitates user participation and contribution. Web 2.0 sites allow users to communicate, create and publish digital content, interact with other users and build online communities. Typical examples of such collaborative communication platforms are the social media [see above].

Wisdom of the Crowds

Wisdom of the Crowds is a concept described by Surowiecki in his book "The Wisdom of Crowds: Why the Many Are Smarter than the Few and How Collective Wisdom Shapes Business, Economies, Societies and Nations" published in 2004. The author argues that 'under the right circumstances, groups are remarkably intelligent, and are often smarter than the smartest people in them'. "Wise crowds" need (1) diversity of opinion; (2) independence of members from one another; (3) decentralization and (4) a good method for aggregating opinions.

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Background of the study

The development of the user-centred Internet architecture known as Web 2.0 caused a shift from traditional media, where a passive audience consumed centrally-distributed information, to the new media which offer the means for democratic communication to people who were normally excluded from media production. The whole structure of the World Wide Web makes it impossible to keep it centralised and censored; it is organised for wide social participation and collaborative creativity. Networked digital technologies offer publishing and communication opportunities to everyone. The participatory approach initiated through the democratisation of information and communication technologies opened up new horizons for knowledge production and creative expression. The emerging social practices of bottom-up creativity that have grown around the new media technologies have served as the initial impetus for this study.

From the early nineties, I have been actively engaged with computer technology and the Internet, witnessing its evolution from rare to ubiquitous, from passive to participatory, from restrictive to open and collaborative as we know it today.

Having completed a formal education in media and communication design, I became one of the 'elite' computer and creative professionals who enjoyed the benefits of the new media technology through being able to use them to their full extent and, convinced by the growing capacity of computer technology, began to explore the new computer-based opportunities for everyday creativity. The new opportunities for digital content creation, manipulation and publishing opened new dimensions for creative self-expression and idea exchange. However, the growing 'hype' around the new media technology did not necessarily make it accessible for everyone. Thus, society has been divided into those able to take advantage of the new technology and those who remained outside the digital world. This problem of unequal access to digital technology lead the author to search for ways of engaging people to interact with the digital tools for creative expression and participation in online communities. From this, arose the view that creative engagement is an interesting and entertaining way of acquiring domain-relevant skills for everyday creative practices and gaining confidence in the effective and beneficial use of new technologies.

The participatory Flash- and Shockwave¹-based digital art projects I developed during earlier studies showed that interactive tools with easy and intuitive user interfaces aimed at creative experimentation motivated the audience to engage with those tools. Such interaction was often connected with joy and excitement and sometimes resulted in original highly-creative outcomes.

Convinced that everyone is capable of creativity and inspired by the success of these participatory software art projects, the next step was to look for further ways to offer more opportunities for general public to engage with digital tools for creativity. The majority of existing digital art software consisted of commercial products² available at prices unaffordable by the average user. Their sophisticated interfaces and the complexity of workflow made most of them unsuitable for use by the general public. Investigations were carried out into participatory art projects released as 'artistic software'. Those, mainly Shockwave-based applications created by artists and programmers enabled users to generate digital images by simple manipulation. This innovative art movement fostered by new media festivals as Transmediale and Ars Electronica inspired many media artists to experiment with participatory artistic software. Alexei Shulgin, Adrian Word, Netochka Nezvanova were among those who were known for their exceptionally innovative contributions. Alexei Shulgin is known for his early software art performances as well as the interactive "Form Art" project where the user navigates the site clicking through various boxes and links leading to countless animations made of "form art" objects. Adrian Ward has won several awards for his Signwave Auto-Illustrator³, a generative art graphic design application, which parodies Adobe Photoshop. Netochka Nezvanova is the author of the highly influential nato.0+55+3d⁴ software suite for live video manipulation. However, the software art

¹ Adobe Flash (formerly Macromedia Flash) and Adobe Shockwave (formerly Macromedia Shockwave) are multimedia platform used to add animation, video and interactivity to web pages or standalone projects.

² E.g. Corel Painter, Corel Draw, Adobe Photoshop, Adobe Illustrator, Macromedia Freehand. The prices range from approximately 270£ to 650 £.

³ Project website: <http://swai.signwave.co.uk/> (retrieved on 23.04.2010)

⁴ Information on "nato.0+55+3d" can be found at <http://en.wikipedia.org/wiki/Nato.0%2B55%2B3d> (retrieved on 23.04.2010)

movement came to the limit of its capacities and slowly faded away pushed aside by the new developments in information technology.

In 2006, when this study was being planned, the explosion of user-generated content enabled by the new, ground-breaking, social media technologies made obvious the public's desire for creative expression. The emerging practices of bottom-up creative production in the new media context, along with the user-led communities offering peer support and collaboration have rarely been the subject of academic research.

This thesis aims to contribute to a growing body of work on the phenomenon of the digital-media-based, 'everyday' creativity by investigating such key factors as participatory environment of Web 2.0, creativity support tools, open standards and the strategies for informal learning.

Introduction

This thesis aims to link everyday creativity that is seen as a natural component of everyday life to digital networked technologies that provide the means to support creative activities as well as create environments where new creative practices emerge. The phenomenon of everyday creativity is explored as an inherently social and communicative process that relies on a wide range of factors through which the creative process becomes possible. In line with Pickering and Negus (2004), skill development through practice and communication of experience is considered as a necessary component of creative practices that lead to a greater mastery and quality of the outcome as well as to personal rewards. Study and consumption of existing creative work is considered as an important part of obtaining domain-relevant knowledge that helps position the creator within a community of practice. Online communities or social networks are discussed through the lens of a creative environment that provides tools, training, support, audience and judgment.

The Internet as the social platform

At the beginning of the 21st century, the Internet has turned from being just another publishing medium carrying content produced by technical cognoscenti into a major communication network which is functioning on various levels from amateur to a professional standard providing participation and production opportunities for almost everyone. The growing ubiquity of digital technologies and the Internet initiated radical transformations in how media is produced, consumed and distributed. Personal computers connected to the global network enabled bottom-up cultural production and participation. Some communication channels are available only through the use of the networked digital technology. In response to this shift, new economic models emerged, that support and rely on the aggregation of individual contributions and collective effort. The digital environments enabled through the participatory architecture of Web 2.0 are used by a growing number of people as spaces for cultural production, participation and communication. This initiated a shift from passive audience to active production, from individual to collaborative effort, and from personal to social and shared spaces. In the

tradition of media theory media recipient have been theorised in connection to a specific medium. However, with the growing ubiquity of the World Wide Web, the term 'user' cannot be avoided when writing about new media. Users are usually described as Internet contributors, who put in a 'certain amount of creative effort' which is 'created outside of professional routines and platforms' (Van Dijck, 2009). 'User' is a much more complex term that encompasses different levels of interaction with the digital networked technology, from readers to active contributors who produce content on a professional level. As Van Dijck argues, due to the complexity of user agency, 'we need to account for the multifarious roles of users in a media environment where the boundaries between commerce, content and information are currently being redrawn' (Van Dijck, 2009:42).

Due to the complexity of the phenomenon of user agency and participation it cannot be approached from a single perspective. In fact, the Internet provides the tools for participation, communication and collaboration. These opportunities can be used by anyone for different purposes. Thus, the Internet can be used for profit-making, for self-presentation, for communication and as a pool of collective knowledge. Both huge corporations and individual users make use of this framework. It is wrong to view the many-faceted nature of the online world as a single phenomenon that is either positive or negative, liberating or exploitative. Instead, each form of cultural participation that grows around individual online spaces requires an individual approach including careful examination of social processes and their cultural implications. In this thesis participation is explored from the bottom-up perspective of user agency: motivation and reasons for participation, kinds of participation and user-generated content, acquisition of learning and experience exchange as well as extended opportunities for personal creativity and self-expression.

Participatory architecture of digital networked media is often celebrated for its opportunity for learning, creative expression, civic engagement, political empowerment and economic advancement. Digital tools for media production and distribution allow grassroots cultural participation outside of corporate structures. Besides that, new economic concepts emerge that rely on active contribution of users. Howard Rheingold writes, 'Location-sensing wireless organizers, wireless networks, and community supercomputing collectives all have one thing in common: They enable people to act together in new ways and situations where collective action was not possible before'

(Rheingold, 2002:xviii). While proponents of UGC see democratisation of media production as empowerment that gives liberating power to the people, its opponents criticise the on-going amateurisation of many areas and the exploitation of user agency. User-generated-content is perhaps the most significant development enabled by Web 2.0. The term 'user-generated-content' is usually used in a simplified way to refer to any kind of content that was created by users of online services. However, a more detailed approach is needed to develop an understanding of the process of user-generated content creation and its individual and social implications. I elaborate on different forms of UGC as well as its drivers and implications in Chapter 2.

The critics of the Internet are concerned with the shift in the quality of the unauthorised content produced and shared by amateurs over the web. Andrew Keen (2007) sees the web as a pool of 'mediocrity' and 'amateurism' and a threat to the authority of experts, professionals and institutions.

An extensive debate over the social implications of the digital technologies and the Internet is among the communitarian optimists (Leadbeater, 2009; Jenkins, 2006; Benkler, 2006; Bruns, 2007; Burgess, 2007) who value the new opportunities for participation, communication and creativity enabled by Information Technology and the Internet and the Marxist School (Fuchs, 2013; Van Dijck, 2009) who see the huge companies like Facebook or Google as capitalist media owners aimed at profit-making. In Marxist theory, capitalist media are 'a means of advertising and commodification and spaces of ideology' (Fuchs, 2013:22). Humans are regarded as 'consumers of advertisements and commodities' and as 'an instrument for economic profit accumulation' (Fuchs, 2013:22) as their data is sold to advertising companies. The media in capitalists systems is used to promote the ideology of being the best or only possible system.

Exploitation of free user labour for commercial purposes, lack of control over uploaded data by the users, unequal distribution of power and visibility these are the main points of critique of proprietary online services and networks. The information (included user-generated content, profile information and personal data) uploaded to such commercial portals like YouTube, Facebook and MySpace is not owned and controlled by the users. The service providers 'obtain the right to sell data about the uploaded information and your usage behaviour to other companies' (Fuchs, 2013.18).

The term 'Web 2.0' was coined by O'Reilly in 2005 who described it as a new platform featuring new applications 'that make the most of the intrinsic advantages of that platform: delivering software as a continually-updated service that gets better the more people use it, consuming and remixing data from multiple sources, including individual users, while providing their own data and services in a form that allows remixing by others, creating network effects through an "architecture of participation", and going beyond the page metaphor of Web 1.0 to deliver rich user experiences'. (O'Reilly 2005b). The main characteristics of Web 2.0 as listed by O'Reilly (2005) are: radical decentralization, radical trust, participation instead of publishing, users as contributors, rich user experience, the long tail, the web as platform, control of one's own data, remixing data, collective intelligence, attitudes, better software by more users, play, undetermined user behaviour. He nevertheless admits, that the term was created to distinguish the new economic strategy for Internet companies based on value creation through the agency of the 'community of connected users' and collective intelligence (O'Reilly and Battelle, 2009).

The new web economy based on user contribution is often criticised by scholars and media experts. According to Stayner (2009), the Internet economy is dominated by corporate media chains (Stayner, 2009). Fuchs (2008) argues, that Web 2.0 is a marketing ideology that serves corporate interests and is based on exploitations of free labour (Terranova, 2004). Some scholars view Web 2.0 optimism that promotes freedom of sharing and participation as a form of empowerment as uncritical and serving corporate interests (Van Dijck and Nieborg, 2009, Fuchs, 2008a).

Fuchs describes media as 'techno-social systems, in which information and communication technologies enable and constrain human activities that create knowledge that is produced, distributed and consumed with the help of technologies in a dynamic and reflexive process that connects technological structures and human agency' (2013:40). He describes the Internet as a network that interconnects social networks and technological networks of computers. This network enables production and reproduction of human actions and social networks and it is itself produced and reproduced by these practices (Fuchs, 2013.40). In contrast to deterministic approaches Fuchs sees social media as a complex system with technological and social dimensions

that interact in complex ways. He argues that an understanding of 'social' as applied to social media requires an investigation of sociality.

Web 2.0 is often referred to as 'The Social Web' that through its participatory architecture that 'increase our ability to share, to co-operate, with one another, and to take collective action, all outside the framework of traditional institutional institutions and organizations" (Shirky, 2008, 20f). The shift from the static web towards a social web of Web 2.0 made it much easier for laypersons to produce and publish digital content and to participate in online communities. 'A new topology of distribution of information has emerged, based in 'real' social networks, but also enhanced by casual and algorithmic connections' (Terranova and Donovan, 2013: 297). The social aspect of participatory web and social media is apparent if we look at definitions found in the research literature: collective action and collective intelligence, communication, communities, networking, cooperation, collaboration, sharing, user-generated-content and user-led creation. 'The very word 'social' associated with media implies that platforms are user-centred and that they facilitate communal activities, just as the term 'participatory' emphasizes human collaboration. Indeed, social media can be seen as online facilitators or enhancers of human networks – webs of people that promote connectedness as a social value' (Van Dijck 2013, 11). Lovink (2011:5) describes three distinguishing feature of Web 2.0: it is easy to use, it facilitates sociality, and it provides users with free publishing and production platforms that allow them to upload content in any form, be it pictures, videos, or text'.

Among the leading authors who promote freedom of expression and collaborative creativity is Henry Jenkins who, since the emergence of the World Wide Web, has started talking about "active consumerism" and the emerging participatory culture (Jenkins, 2006). Focusing on cultural aspects, Jenkins and other participation optimists ignore the issues of ownership and power distribution. Praising the participatory opportunities of digital media Jenkins does not mention the exploitation of user labour by the service providers. He fails to make a distinction between commercial social media networks like Facebook, Google and Youtube that promote creativity for profit gaining and the non-commercial user-led communities like Wikipedia and Open Source movements that focus on knowledge generation through collective action.

Yochai Benkler in his “Wealth of Networks” (2006) argues for the development of a new ‘networked information economy’ the key aspect of which is the ‘decentralised individual action’ (Benkler, 2006:3) that, together with the elimination of communication costs and the new opportunities for communication enabled by the Internet, allows a new democratic and participative ‘networked public sphere’. Benkler describes the emerging phenomenon of a decentralised, distributed mode of user interaction as the ‘commons-based peer production’, which relies on alternative property rights and is based on the ‘wisdom of the crowds’. Some examples of such models of production are the Wikipedia encyclopaedia that allows users to generate their own entries and modify those made by others. Another case is open-source software that is based on openness and collaboration. For Benkler, peer production is a way to individual freedom of expression and achieving personal goals without restraints.

Each of the thousands of volunteers who participate in free software development projects, in Wikipedia, in the Open Directory Project, or in any of the many other peer-production projects [...] has decided to take advantage of some combination of technical, organisational and social conditions within which we have come to live, and to become an active creator in his or her world, rather than merely to accept what was already there. The belief that it is possible to make something valuable happen in the world, and the practice of actually acting on that belief, represent a qualitative improvement in the condition of individual freedom (Benkler, 2006:137).

The conscious decision to participate in the web-based communities of practice, based merely on intrinsic motivation rather than on extrinsic or material reward, demands creativity, critical thinking and some courage to present the individual's own work to the world. Open Source software projects or citizen journalism are among the popular areas that rely on committed amateurs and community support. The participatory turn in the consumption of culture and the growing ubiquity of communication and information technologies gave birth to the rise of amateurism and the emergence of the new types of amateur production (e.g. ‘crowdsourcing’, ‘produsage’).

Participatory architecture of Web 2.0 does rely on user creativity and contribution that creates economic value. More options for self-expression, self-presentation and communication enabled by digital technologies and the Internet are to be paid for with the loss of control over personal data. The potential of digital media to transform an audience into producers may have caused increased participation. However, democratisation of content production and distribution means that not every user is turned into a producer and does not automatically bring liberating power to the people. This is a complex process that stretches over social, political and economic areas of contemporary society.

User interaction and content creation is one of the important concepts in the new media environment. Grassroots media participation is often celebrated as a revolutionary and democratic way to empowerment. However, physical availability of tools for content production and distribution does not make everyone into a producer. Furthermore, participation is a complex phenomenon that requires categorisation of user engagement. At least, despite the seemingly liberating potential of new media technology, mere participation does not guarantee empowerment.

In recent years, cyberculture has informally reported a phenomenon named the 1% rule, or 90-9-1 principle, which seeks to explain participatory patterns and network effects within Internet communities. The rule states that 90% of actors observe and do not participate, 9% contribute sparingly, and 1% of actors create the vast majority of new content. This 90%, 9%, and 1% are also known as Lurkers, Contributors, and Superusers, respectively (Van Mierlo, 2013:33).

To prove that this rule of thumb is widely accepted in digital marketing, in 2013 van Mierlo conducted a study to determine if the 1% rule applies to moderated Digital Health Social Networks (DHSNs). He found that the 1% rule was consistent across the four DHSNs (the AlcoholHelpCenter, DepressionCenter, PanicCenter and StopSmokingCenter sites). The 1% principle cannot be applied to the Internet in general as participation rates depend on the area, aims and motivations of a specific community. For example, communities of practice, such as Free and Open Source or photographic

communities, may have higher participation rates. Nevertheless, the active content creators remain a minority among the Internet population.

Grassroots media production and participation is a social process that cannot be explored in isolation but rather in relation to the social norms and dominant culture that influence cultural production. Participation is another aspect that is often loosely used and therefore, requires clarification. For Jenkins, participation is when users actively engage with any kind of online social structures. His position is more cultural, from the users' perspective and less political. The more critical and ideological concepts resist participation in commercial structures that restrict freedom and exploit user labour for profit gaining. Fuchs (2013:61) argues, that 'the participatory Internet can only be found in those areas that resist corporate domination and where activists and users engage in building and reproducing non-commercial, non-profit Internet projects like Wikipedia or Diaspora'. Similarly, the Open Source and Free Software projects resist domination of commercial products and develop high-quality software that is often available for free.

The shift from 'media' to 'social media' initiated by the development of Web 2.0 and the user-centred architecture of the web has led to an explosion of user-generated content. Through the growing popularity of online social networks like Facebook, MySpace and many others that target the modern user's needs for communication and creative expression, bottom-up cultural production has become increasingly integrated into everyday life. Social media offer easy-to-use tools for the creation and publishing of digital content. Users can upload photographs, videos, music and texts and make them available to others. These opportunities for self-expression through digital content creation and publishing, communication and community involvement are being explored by the growing numbers of web and computer technology users. This is illustrated by the Facebook statistics that claim that the 'average Facebook user creates 90 pieces of content each month' and more than 30 billion pieces of content (web links, news stories, blog posts, notes, photo albums, etc.) are shared each month on Facebook' (Facebook Statistics, August 2011). There are also online communities that specialise in certain kinds of digital content. For instance, MySpace is often used by musicians to introduce their work to a wider audience and to colleagues; Flickr is known as a large photographic community with professionals and amateurs involved; YouTube owes its growing popularity to its accessible video compression and uploading. All these services

attract more users every year which indicates the growing interest in digital content production and publishing among the general public. In response to the growing popularity, the service providers adjust their products to the needs of the users 'in order to enable the continuity of Internet-based capital accumulation' (Fuchs, 2013:50).

User-Generated-Content is a general term that is applied to any form of audience participation. Therefore, more clarity is needed when talking about specific types of user-produced material. The suggested categories of UGC encompass the main forms of user labour in the online environment. They do not exist in isolation. Generally, the most common user activities on the web - like participation in online communities; communication and collaboration with other users - include production of various types of digital content. User-produced content and user comment are the most popular forms of user labour that fill the participative web: Social networks, online communities of practice, commercial websites that invite audience participation, Wikis, Blogs, Microblogs, Forums and question-answer databases and other examples of Web 2.0.

Collaboration and re-mix are further popular forms of User-Generated-Content. Open source software is a good example of such practices. The source code produced under General Public License can be downloaded and modified. It has become a general practice in Open Source Software to build on existing pieces of code to fix bugs or to produce a better version of an existing application. There is a range of other areas that utilize mash-up and collaboration, as for instance, derivative art, Fanfiction, spoof videos on YouTube and user-created pseudo-movie trailers. The new opportunities for collaboration, content creation and sharing lead to the emergence of a new type of amateurism.

The new amateur practices in online environment

Today, we can experience the rise of amateurism in many areas, initiated by the growing ubiquity of digital technologies. Ivey and Tepper (2006) are talking about the next cultural transformation that Jenkins (2007) calls 'a revitalisation of folk culture'. The Internet offers channels for communication and publishing that bypass the mainstream media and allow reaching the audience or the similar-minded directly. The World Wide

Web with its participatory architecture makes it possible to search for information, to acquire knowledge and skills, to connect to communities of other amateurs and professionals, to produce and publish content, to communicate and to receive feedback on one's own practice. On the one hand, democratisation of production and publishing opportunities served as the initial impetus for the masses to 'play around' with the new tools thereby producing terabytes of digital content that is neither interesting nor valuable to anyone. However, in some cases dabbling can lead to a greater commitment and interest. Every amateur was at some point in time a novice who, merely intrinsically motivated (without expecting any material reward), invested time and often money to acquire skills and gain expertise in the area of interest. On the other hand, in some areas, online communities of highly motivated amateurs work to professional standards and even achieve better results than their professional colleagues. Open Source software projects or Wikis are among areas that rely on committed amateurs and the strength of a community. Amateur practices in many areas are experiencing a comeback relying on the Internet as a platform for self-publishing and communication.

Amateurism is a complex concept that involves different levels of commitment and qualities. The digital technologies and the Internet gave birth to a new type of serious amateurs who, individually or through collaborative effort, work to professional levels and in this way create economic value and contribute to common culture.

Among optimists who believe in the positive effects of the digital network media is Charles Leadbeater (2009) who in his book *We-Think* describes the web's emergent culture of sharing as a drive for mass innovation. Leadbeater and Miller (2004) describe professional amateurs who utilise the web as a communication and experience-sharing platform as Pro-Ams, who are skilled and knowledgeable and achieve a professional quality through collaboration and combined effort. They give a number of examples of successful examples of Pro Am activity. For instance, Free and Open Source software relies on the joint efforts of 'professional amateurs' from all over the globe whose work results in high-standard software products available at no cost for general use. The advantages of such a collective approach lie in free will and openness. Bugs are quickly found and eliminated, new features are added and new versions follow promptly. Such collaborative efforts result in a vast development of innovative products that serve the needs of a growing digital community, often overtaking commercial products in

popularity. For Leadbeater, the 'inbuilt impulse for collaboration lies at the heart of the economic power of Pro Ams' (2008:34). The people that Leadbeater and Miller identify as Pro-Ams are partly defined through their ability to use the capacity and resources offered by digital technologies efficiently. Leadbeater (2008) describes the economic power of 'pro-am tribes' who interact in communities of shared interests that contribute to innovation through sharing. Shared knowledge in various forms such as ideas, information, tools or software provides the basis for such communities that aim to generate 'more knowledge'. This concept that utilizes the power of shared knowledge is known also as crowdsourcing. Crowdsourcing can be applied to a wide range of activities. It exists as a business model, innovation model, a solution for problem-solving, outsourcing of specific tasks to a wider population or even to projects in the creative sector. Open, self-regulated, peer-to-peer communities usually rely on the concept of crowdsourcing. Wikipedia or the Free Software and the Open Source movement are working examples of such user-led communities that are aimed at innovation and generation of knowledge. This type of crowdsourcing values every contribution. There is also another type of crowdsourcing that is often criticised for its inefficiency, exploitation of the crowd for economic value and as a waste of human resources. For instance, with design awards, companies intend to save money and receive a lot of interesting submissions. This results in many hours of wasted work for all ideas that have been discarded. Efficient way of crowdsourcing is a collective activity that relies on the sum of individual contributions to a collective pool and construction of collective value.

There are other examples of the use of digital technologies for serious leisure. In contrast to crowdsourcing, which is merely a collective activity, blogging is an individual activity that is aimed at bringing the blogger's experiences to a wide audience. Blogs have evolved to be key drivers of news and discussions online due to their simplicity of maintenance and immediacy of output. Blogging is often used by serious amateurs to publish their work and connect to other amateurs. For instance, it is the most conventional method of modern citizen journalism. Many writers, musicians, photographers and other artists often use blogging to test new ideas and to receive feedback. Also, an increasing number of professionals who have recognised the benefits of direct communication with the audience publish their draft work online to test it against

public opinion. Cox and Blake (2011) conducted research into food blogging, examining it through the lens of serious leisure.

They found that food blogging involved the creation, selecting and organisation of a lot of content, especially photos, which is time-consuming and requires skills for maintaining the website, photo-processing, information management and organisation as well as writing skills. Cox and Blake (2011) conclude that although blogs are easy to set up, maintaining them is complex and time-consuming, which a possible explanation of the relatively low number of users who maintain a personal blog.

An alternative solution is membership of a dedicated online community that provides a website that allows members to set up a personal profile, upload photographs and other media, communicate with other users and write and receive comments. Searchable databases, social networking and peer-support are further advantages of online communities.

Communities of practice and informal learning

The participatory turn in the use of digital technologies and the rise of social media have raised much interest in communities of practice that stand for learning as an inherently social process. Although communities of practice are mentioned in many writings on Web 2.0, the usage of the term is very diverse ranging from virtual communities or informal groups that facilitate learning to a conceptual understanding of social construction of meaning. However, all approaches share the common ground viewing learning and construction of meaning as social processes and setting identity in focus. Wenger defines communities of practice as 'groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly' (Wenger, 2006). For Wenger, communities of practice have a purpose, whereas conventional communities are usually unpurposeful. They are dynamic and evolve over time driven by a creative force. They participate in an activity system 'about which participants share understandings concerning what they are doing and what that means for their lives and for their communities'. (Wenger, 1998). Lave and Wenger (1991) developed a new approach to learning, placing it in social relationships of co-participation. Their situated learning theory that was developed in the pre-Internet era

goes beyond learning-by-doing. 'Learners inevitably participate in communities of practitioners and... the mastery of knowledge and skill requires newcomers to move toward full participation in the socio-cultural practices of a community (Lave and Wenger 1991: 29).

Due to the on-going digitization and development of virtual communications, understanding of the term 'community' moves from local to global, from face-to-face to online. In 2005, Wenger writes in his report, that today, 'communities reach out across much greater distances than ever before. Participation is richer and can be more meaningful despite limited "face time"' (2005:1). For Wenger, technology is complementary to community if properly designed and used. Digital technologies and the Internet brought many advantages to existing communities as well as enabling new ways of community building. There is a need to distinguish between communities of practice that use digital technology and virtual communities of practice that are enabled by the computer technology and the Internet. As in conventional communities, in online communities learning can take place through direct mentorship and through participation. Among important advantages of digital technology are the searchable databases, where knowledge and existing discussions can be stored and accessed any time. This enables self-directed non-linear learning from a community's available resources. As described above, FLOSS is a good example of an online community of practice with many sub-groups dedicated to specific projects. Besides, there are a lot of online communities of practice in different areas such as photography, art, science, crafting and many others. Participation in such communities has the advantage of enabling people to connect to others who share one's interests. The global dimension of online communities allows members to accumulate knowledge from different geographically-dispersed sources and to make it available to others. Many communities offer their learning resources for free to a wider audience. Especially for those with restricted access to conventional communities (due to their geographical location, the domain or other reasons), online communities of practice offer valuable resources for learning, communication, collaboration, gaining mastery in the domain and presenting their own work to others.

In 2007, Jean Burgess conducted a study on the most popular photographic community, the Flickr. Burgess describes Flickr as an interactive environment that offers

new modes of participation that promote exploratory and playful forms of engagement. She conceptualises Flickr not as a mere technological innovation applied to a photo-sharing service but as a social destination and a site of cultural practice. During her two and a half year study of Flickr participants online and in 'real life', Burgess found out, that 'the participants' narratives of "becoming photographers" reveal complex relationships among the knowledgeable consumption of technologies, learning the techniques and aesthetics of "good photography", and participating in communities of practice, both online and off' (Burgess, 2007:157).

In recent years there has been a rising interest in communities of practice as spaces for knowledge-generation and learning-in-action through situated practice. Knowledge generation and innovation are not the only reasons for participating in communities of practice. Wasko and Faraj (2000) in their study of three Usenet technical communities found that people collaborate not only in expectation of tangible returns or outcomes, but also for other merely social reasons such as meeting the similar-minded, learning from others, helping each other, having the feeling of belonging to a community and maintaining a certain 'craft standard'. Virtual communities of practice can help to nurture everyday creative activities, to motivate people to present their work to other similar-minded individuals and to learn through participation and active engagement.

The manipulative nature of Digital Photography

The production and distribution of audiovisual content is an integral part of modern communication and social networking. Due to the growing ubiquity of mobile digital technologies that are equipped with hardware and software capable of capturing still and moving images as well as audio, terabytes of audiovisual data flow daily across the Internet and mobile communication channels. KPCB analyst Mary Meeker's annual Internet Trends report states that all internet-connected citizens share over 1.8 billion photos each day multi-platform through services such as Snapchat, Instagram, Facebook and WhatsApp and these figures are growing exponentially (Meeker, 2014:62).

This strive for capturing and sharing of personal or important events, pleasurable views and memorable pictures with friends and relatives can be tracked back to the invention of the first consumer cameras in 1880ies and especially, the advent of the

Kodak culture. With its easy-to use cameras and printing services Kodak made photography accessible to almost everyone. Since then, non-professional photography has become a mass phenomenon that was described in research as domestic, family or snapshot photography. Since the invention of consumer cameras, ordinary or personal photography is “both a leisure pursuit and an increasingly flexible medium for the construction of ordinary people’s accounts of their lives and fantasies” (Holland, 1997: 196). From the very beginning, this type of photography that lies outside of professional practice is changing constantly pushed by emerging technological developments. The most affected, however, is not the photographic equipment, but the way photographs are produced, used and disseminated. The process of taking photographic images had not changed much since its invention. The recording medium, however, was the one that was experimented with the most and that changed over time: metal and glass plates, celluloid film and on to the digital CCD sensor that we use it today in digital cameras.

In contrast to analogue photography with its closed infrastructure, ‘the history of digital photography is one of increasing assimilation into a general-purpose, networked, computing infrastructure’ (Sarvas and Frohlich, 2011:84). In response to the on-going digitisation, in the early nineties the first two models of fully digital consumer cameras were brought onto the market. Almost simultaneously, the first image-processing software was released – the Adobe Photoshop. Although that was designed for professional photographers and graphic designers. The growing ubiquity of digital cameras, home PCs, photo scanners and printers many non-professionals started to use image-editing software for optimisation and manipulation of photographic images. Despite the proximity to conventional photographic practice found in the origins of digital photography, the latter is distinguished through several innovations enabled by digital technology: encoding, manipulation and simulation. Apart from that, dissemination and convergence are key factors that characterize the use of digital images (Lister, 2004; Rosen, 2001).

The numerical nature of digital data and its fluidity provides more control and ‘more access to the imaging process between the stages of taking the picture and looking at its printed result’ (Van Dijck, 2008:66). Although image manipulation was always a consistent part of photography, the digital technology made it accessible to the masses. Due to the wide accessibility of image editing tools and the simplicity of the

process, more people get to use these techniques and more images are being manipulated than ever before. Those manipulations that are part of contemporary photographic practice range from minor adjustments of colour, tone, contrast and exposure to totally artificial pictures that involve the erasing and inserting of objects cut out from other photographs or constructed in a 3D program. The constructed or simulated photorealistic images are 'generated from data and knowledge - where no human eye, looking through a viewfinder, had directed a lens at an actual object in the physical world, opened a shutter and traced its image' (Lister, 2004:298).

Images are altered for different reasons and there are plenty of possibilities between colour corrections and cropping that are often unavoidable in fiction and simulations. No camera is perfect and often the picture does not resemble the photographer's vision and concept. Colour correction does not contradict any ethical norms and is an integral part of any kind of photographic practice. Another level of manipulation often used in advertising, beauty or fashion magazines and the boulevard press include adding or removing objects, reshaping and retouching – techniques that significantly change the original image, sometimes making it hardly recognisable. Such kinds of image manipulation have more resemblance to painting or art than to photography. All image manipulation can be placed on a scale between the ethics and aesthetics, whereby the emphasis depends on the kind of photographic practice.

Although image alteration has always been an integral part of photography, it has been a rather complex process that required advanced knowledge and skills. With digital technology, manipulation of images has become easy and accessible for non-professionals. Similarly to the Kodak revolution that made photography available to the masses, digital technology democratized image editing and made it a part of consumer photography.

Today, there is a range of applications available for different devices, platforms and operating systems that allow almost any kind of image manipulation, from simple to advanced. Moreover, there are plenty of affordable services that allow images to be posted online or printed on various materials. The majority of mobile phones are equipped with a camera and there are many Apps for smartphones that allow image editing and manipulation. The affordable easy-to-use technology that has become ubiquitous has led to a growing number of people who take photographs and either print

them, publish online or send them via messengers to other people. A non-professional analogue photograph was likely to be shown to a small group of friends and relatives. The global connectivity of the Internet provides a means of immediate dissemination of digital information, including pictures. Thus, images placed online on social networks' photographic showrooms and other public websites are 'public' and are viewed by many more people than the analogue pictures. Often, the viewers react with a 'like' or by leaving a comment.

Following this trend, photo filter applications, such as Instagram, Snapseed and Hipstamatic, which are mainly used on mobile devices, 'mark a new era in digital photography, one which allows users to easily improve mediocre images taken with camera phones through the application of vintage filters, film scratches, and polarisation effects' (Caoduro, 2014:68). There are a lot of software applications aimed at photo-manipulation and processing ranging from simple filter-apps to professional. Photoshop is the leading program widely used by professional photographers, graphic designers and artists. However, the high price of the program makes it barely affordable for those who see photography as a hobby or leisure activity and do not make money with it. The free software and the open source movement produced a powerful image editor with capabilities similar to Photoshop that can be downloaded and used free of charge. The GIMP is developed by a self-organised group of volunteers as a free software project based on the General Public License (GNU). Its 'openness' has two major advantages: the software is in constant development and testing whereby new capabilities are added, bugs are fixed and usability optimised. Developers cooperate with a large user community who test the beta versions, provide feedback and express wishes for future development. Another asset of a large community is the pool of knowledge available online that encompasses wikis, tutorials, forums and social networks dedicated to this product. Apart from that, it is common in free and open source software where the source code is open for everyone to use that variations of derivatives of the original software are produced. The fact that the GIMP is available for all major operating systems makes it accessible to almost everyone. Especially communities of amateur photographers describe the GIMP as a useful and powerful program that provides all the necessary tools for image manipulation free of cost.

To sum up, image processing and alteration has always been a part of photography. With the democratisation of photography - and especially with the rise of digital technologies - there is a growing demand for tools that can be used by non-professionals to optimize their pictures. Some of those tools are of very limited capability but can be used intuitively without any training (e.g. photo-filter apps). Other tools offer advanced functionality but require initial training to get started. Some of the major tools are very expensive and not affordable for an average user. Free alternatives developed by the user-led communities often provide tools of similar capabilities. The advantages of such distributions are as freely available resources for individual learning as well as the peer-support and the user-community.

Methodology

Research Problem

The rise of digital technologies and the Internet initiated a debate on the potential of the participatory architecture of the web services to transform the audience into active participants and producers of user-generated content. Despite the apparent democratisation of the means for media production and distribution, participators who produce content represent only a small part of the population. Moreover, through the use of the popular commercial online services, users, often unknowingly, are subject to exploitation and become simply a source of profit. They have no ownership over personal and uploaded data and no influence on how this data is used by the service providers.

Alternatives to commercial social networks and services are the user-led communities that are based on the collaborative efforts of volunteers. Their aim is the production and sharing of knowledge. They support the idea that knowledge is a common property that should be available for everyone free of cost. Wikis and Free and Open Source movements are examples of such collaborative environments. Communities of practice provide opportunities for learning through participation, knowledge exchange, peer-support and the use of online databases and learning resources. Through membership of communities of practice, amateurs and hobbyists can connect to other users and acquire domain-relevant skills and general digital competencies through participation.

Digital photography is one of the most popular leisure activities among the general public as still images form a significant part of modern communication. Image processing and manipulation are parts of digital imaging that enable the optimisation of images to achieve the desired results. There is a wide range of image-editing tools available ranging from sophisticated professional software to simple photo-filter apps. Some of the tools need to be purchased at high prices, others are available for free.

The simple image editors of photo-filter apps can be learned intuitively and require no specific knowledge of image processing. These tools are of very limited capability and are usually equipped with such basic functionality as cropping, rotating and simple

colour adjustment settings. Advanced image processing requires more capable tools such as the proprietary Adobe Photoshop or the free software the GIMP. Photoshop is a leading software editor that can be purchased for approximately £650 (in November 2015) The GIMP offers similar functionality and is available free of cost. These tools provide an extended functionality and need to be learned. Both amateurs and professionals require a learning environment and time to become familiar with the user interface and functionality of a tool. Due to the complexity of the interface, the initial learning is best undertaken through face-to-face or video tutorials where a teacher explains the interface and functionality of individual tools. Further learning can take place through hands-on experience and autodidactic learning through participation in online communities and the use of online learning resources.

Research Questions:

The research problem of this thesis described above has been narrowed down to two research questions:

1. What implications do the uses of participatory structures of digital technology have for everyday creative activities and the acquisition of digital competencies and domain-relevant skills by non-professionals?
2. To what extent can an introductory workshop for a free-software image editor (the GIMP) facilitate the further use of this tool and self-learning through the use of corresponding online resources?

Hypothesis

Content production and publishing is becoming increasingly incorporated into modern communication practices. Some communication channels are available only through the use of digital technologies. Despite the big hype around participation, only a small part of the population produces content.

Through the active use of digital networked technologies and participation in virtual communities of practice, users acquire digital competencies and domain-relevant skills that enable them to produce and publish digital content themselves.

Photographic images form a significant part of user-produced data. Image processing and manipulation are integral parts of photographic practice at all levels ranging from snapshot to professional. This requires software tools and specific knowledge and skills that need to be learned. An introductory workshop for non-professionals is suggested as a relatively time- and cost-saving opportunity to familiarise participants with a free software image-editing program – the GIMP. The workshop should provide participants with basic knowledge of the program functionality and information about corresponding online resources for participation and self-learning.

Research Aim:

To explore the structures of participation in online environments and the use of digital networked technology and its implications for creative practices as leisure activities as well as the acquisition of domain-relevant skills and general digital competencies through participation.

To investigate if a single, one-day, introductory workshop for the GIMP can familiarise participants with its functionality and provide sufficient information about corresponding online resources for participation and learning to enable the further independent use of the tool for image processing.

Research objectives

The theoretical part of the present thesis includes a review of the current scientific knowledge within the following fields:

- Everyday creative practices as leisure activities.
- Structures of user participation in online social spaces and their implications for everyday creativity and informal learning.
- The new amateur practices enabled through the collaborative virtual environments resulting from digital technology.
- Amateur and consumer photography and image manipulation as a part of contemporary photographic practice.

Analysis of the literature within the above-mentioned domains was aimed at the investigation and description of the phenomenon of participation and everyday creative practice taking place in the digital media environment, an evaluation of the gaps not covered by the existing research and making new connections between the domains in relation to the phenomena under investigation. However, to achieve a fuller picture of the phenomenon, the theoretical perspective needs to be complemented with empirical data. For that reason, an empirical study was essential in order to explore this phenomenon, to test the hypotheses and provide the basis for further research.

Setting the research questions as central, the combination of quantitative and qualitative methods has been recognised as a necessary step in developing the research methodology. The empirical research consisted of two consecutive stages whereby the first quantitative part involved an exploratory survey that had the aim of collecting primary quantitative and qualitative data to provide a basis for the following study. The survey provided valuable statistical data that illustrated participants' attitudes to their personal creativity as well as their interests, expectations and gaps related to the use of digital technologies for creative activities.

The second stage of empirical data collection was based upon the survey results that revealed a vivid interest for the use of digital technology for creative activities, especially for image manipulation as well as certain deficits in digital competencies among the survey participants.

Within this stage, a qualitative experiment has been conducted to investigate if a single-day introductory workshop in GIMP can familiarise participants with its functionality and provide information about corresponding online resources for participation and learning sufficiently to enable the further use of the tool for image processing independently. Due to the considerable interest in image manipulation that was revealed in the survey, the GIMP – an extremely powerful and popular free software image-manipulation program - was chosen for the qualitative experiment. A triangulation of qualitative methods has been applied to a group of participants with the purpose of exploring how non-professionals with at least basic computer literacy could cope with using the GIMP for the creation and manipulation of visual digital content.

Before elaborating on the methods used, it seems appropriate to begin with a definition of the research paradigms.

Research Paradigms

Research is a systematic investigation (Burns, 1997) or inquiry which involves different stages of data collection and analysis with the aim of understanding, describing, predicting or controlling a phenomenon, however, 'the exact definition of research is influenced through the researcher's theoretical framework' (Mertens, 2005:2). The theoretical framework or the paradigm affects the way knowledge is studied and interpreted (Mackenzie & Knipe, 2006). It provides the foundation for research methodology, methods and design. Teddlie and Tashakkori define research methodology as a 'broad approach to scientific inquiry specifying how research questions should be asked and answered' (Teddlie and Tashakkori, 2009:21). This includes general considerations of paradigms, research design, strategies for data collection and analysis, tools and assessment criteria. Research methods are strategies and procedures for implementing research design, including sampling, data collection and analysis and the interpretation of the findings.

The term 'paradigm' is defined as the philosophical intent or motivation for undertaking a study (Cohen & Manion, 1994:38) or as 'a loose collection of logically related assumptions, concepts or propositions that orient thinking and research' (Bogdan & Biklen, 1998:22). Researchers commonly use the positivist (and postpositivist), constructivist (and interpretivist), transformative and pragmatic paradigms (Mackenzie & Knipe, 2006).

Positivism (and postpositivism) - also called the 'scientific method' - is "based on the rationalistic, empiricist philosophy" (Mertens, 2005:8). It 'reflects a deterministic philosophy in which causes probably determine effects or outcomes' (Creswell, 2003:7). The positivist paradigm aims to study the social or natural world through 'observation and measurement in order to predict and control forces that surround us' (O'Leary, 2004:5). Positivist and postpositivist research is most commonly aligned with quantitative methods of data collection and analysis (Mackenzie & Knipe, 2006). The constructivist or interpretivist paradigm is aimed at understanding 'the world of human experience' (Cohen & Manion, 1994:36). It assumes that reality is socially constructed and thus the 'researcher investigates the participants' views of the situation being studied from his or her personal perspective' (Mackenzie & Knipe, 2006). The

constructivist (or interpretivist) paradigm is usually associated with qualitative methods of inquiry. The research usually does not begin with a theory, but the theory or meaning develops throughout the research process (Creswell, 2003).

Due to the exploratory nature of this research, it cannot be narrowed to a single paradigm. Setting the research questions as central, the need for combining methods of inquiry was recognised. This approach is known as the pragmatic paradigm, which focuses on the research problem and applies all approaches to achieve an understanding of the problem (Creswell, 2003:11). The pragmatic paradigm provides an opportunity for 'multiple methods, different world views and different assumptions, as well as different forms of data collection and analysis in the mixed methods study' (Creswell, 2003:12). The choice of data collection and analysis methods is not committed to any one system of philosophy or reality but is mainly focused on answering the research questions (Mackenzie & Knipe, 2006).

Mixed-methods Research

The mixed-method research tradition based on a combination of quantitative and qualitative research methods has emerged as a separate approach during the past twenty years (Teddlie & Tashakkori, 2009). Mixed methodologies extend the quantitative and qualitative traditions with a new dimension where the research tools can be better optimised to answer the research questions of a specific study.

Mixed-method research is defined as 'research in which the investigator collects and analyses data, integrates the findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study or program of inquiry' (Tashakkori & Creswell, 2007:4). As Johnson and Onwuegbuzie put it, 'the goal of mixed methods research is not to replace either of these approaches but rather to draw from the strengths and minimise the weaknesses of both in single research studies and across studies' (Johnson and Onwuegbuzie, 2004:14-15). The authors stress the initial importance of research questions, whereby the choice of research methods is aimed at obtaining the answers in the most efficient and useful way.

In order to mix methods effectively, it is essential to consider the relevant characteristics of quantitative and qualitative research. Quantitative research traditionally

focuses on deduction, confirmation, theory/hypothesis testing, explanation, prediction, standardised data-collection and statistical analysis (Johnson & Onwuegbuzie, 2004). The results of quantitative research are usually presented in numerical form. Qualitative methods are aimed at induction, discovery, exploration and theory/hypothesis generation; whereby the researcher is the primary 'instrument' of data collection and qualitative analysis (Johnson & Onwuegbuzie, 2004). Qualitative results are often presented in the form of a narration.

On a philosophical level, the methods are most commonly associated with the two paradigms of positivism (or postpositivism) and constructivism (or interpretivism) (Teddlie & Tashakkori, 2009), whereby a paradigm is defined as a belief system or view of the world (Guba & Lincoln, 1994). Among quantitative methods that operate within a positivist perspective are: surveys, measurement, statistical analysis, questionnaires, experiment and simulation. Qualitative or interpretive methods are interviews, content analysis, participant observation and ethnography, among others. With the emergence of constructivism, some authors argued the incompatibility of the positivist and constructivist approach grounded in a different ontology and epistemology (Guba & Lincoln, 1994). As an answer to the on-going paradigm debates that have been taking place within the competing scientific world-views, a different paradigm - pragmatism - has been suggested (Teddlie & Tashakkori, 2009). Its ground-breaking concept was that quantitative and qualitative methods are compatible and thus can be mixed without worrying about epistemological incoherence (Howe, 1988:10).

The advocates of mixed methodologies believe that, despite the differences between the underlying premises of the positivist and constructivist paradigms, the methods associated with those paradigms can be combined.

However, the pragmatism of employing multiple research methods to study the same general problem by posing different specific questions has some pragmatic implications for social theory. Rather than being wedded to a particular theoretical style [...] and its most compatible method, one might instead combine methods that would encourage or even require integration of different theoretical perspectives to interpret the data (Brewer & Hunter, 2006:55).

Teddlie and Tashakkori (2009) define three areas where mixed-methods research is superior to the single-approach designs:

- It can simultaneously address a range of confirmatory and exploratory questions with both the qualitative and the quantitative approaches.
- It provides better (stronger) inferences.
- It provides the opportunity for a greater assortment of divergent views.

The pragmatic position that enables mixing quantitative and qualitative methods resolved the paradigm conflict for many researchers. Especially, interdisciplinary research often requires different methods of data collection and analysis. As Johnson & Onwuegbuzie write, 'Today's research world is becoming increasingly interdisciplinary, complex, and dynamic; therefore, many researchers need to complement one method with another' (Johnson & Onwuegbuzie, 2004:15).

The Exploratory Survey

An exploratory survey has been conducted with the aim of investigating the personal conceptions on creativity, the everyday creative activities and the role of computer technology in the creative activities of the general public. The survey utilised a self-selected sample of 509 participants recruited through an e-mail-based snowball method.

Data on personal behaviour, habits and beliefs concerning the creative use of digital technology, including open-licenced products, has been collected. The self-reported data collected from participants' subjective views on their creative practices that use digital networked technology should provide a better understanding of the nature of everyday creative activities and the role of digital technology for these activities.

The collection of the primary exploratory data should provide a basis for the subsequent study as well as contribute to the answering of the research questions.

A combination of qualitative and quantitative elements was used within the survey. An elaboration of the methods can be found in Chapter 5.

The survey comprised quantitative and qualitative, open-ended questions aimed at exploring people's attitudes to their personal creativity, their everyday creative activities and the ways in which computers are being used for creative purposes. A set

of questions was aimed at an evaluation of people's awareness of creativity support tools in general and free and open source ones in particular. Along with the investigation of participants' everyday creative habits, one of the major objectives of the study was to analyse the gaps and the obstacles that prevent some participants from using computer tools for creativity. Questions concerning the awareness of free and open source software as well as its use were also included in the questionnaire.

The quantitative and qualitative elements of the survey have been approached through different methods of assessment and analysis. The validity and reliability of quantitative questions have been investigated and measured. The data derived from these questions have been analysed statistically and presented in numerical form. Qualitative data has been analysed, structured and presented in the form of narration and diagrams. In some cases, quantitative and qualitative questions were thought to complement each other; hence the data have been combined and compared during the analysis phase.

This exploratory survey has provided some insights into the phenomenon of the general public's everyday creativity and the role of computer technology in creative activities. The data derived from the survey created the basis for further investigations in the area. The survey with its methods of data collection and analysis, the findings, discussion and conclusion is presented in Chapter 5.

According to the survey findings, the editing, manipulating and sharing of digital images is the most popular activity performed by, or of interest to, the majority of participants. These findings correspond to the results of the Ofcom study on adult media-literacy of 2008 that showed similar trends. These insights derived from the survey created the basis for the subsequent stage of this research which is the qualitative experiment described in Chapter 6.

The results obtained from the exploratory survey confirm the existing interest in everyday creative practices within the digital online environment among the selected sample. The data also illustrates the lack of digital competencies, and therefore the unequal access to creativity support software and knowledge, among study participants.

The Qualitative Experiment

Taking into account the findings of the exploratory survey, the subsequent phase of the empirical research is aimed at answering the second research question: 'To what extent can an introductory workshop for a free-software image editor (the GIMP) facilitate the further use of this tool and self-learning through the use of corresponding online resources?'

The survey data revealed digital photo-editing and manipulation to be the most popular creative activities among participants. Therefore, the GIMP - a free, powerful, software photo-editing program - has been chosen for the experiment in a workshop form, where participants learned basic techniques of image manipulations with the program. The session had the aim of investigating whether this powerful free software tool is suitable for non-professional users' engagement with digital image manipulation. There was also an objective to explore how such a workshop facilitates further use of the tool and acquisition of new skills through participation in virtual communities of practice and learning from online resources.

The qualitative data has been collected through a triangulation of methods. Triangulation is broadly defined by Denzin (1978: 291) as 'the combination of methodologies in the study of the same phenomenon'. According to Creswell (2005), a triangulation of methods contributes to the accuracy and trustworthiness of a study. He writes:

Triangulation is the process of corroborating evidence from different individuals, types of data, or methods of data collection. [...] This ensures that the study will be accurate because the information is not drawn from a single source, individual, or process of data collection. In this way, it encourages the researcher to develop a report that is both accurate and credible (Creswell, 2005:252).

Within the qualitative experiment, pre- and post-session questionnaires, observations and interviews were used as the methods of data collection. Several data sources, enabled through the triangulation of methods, offered a comparison of different perspectives on the same phenomenon. Thus, the questionnaire data reflected participants' views and opinions 'from inside' whilst observation, in contrast, was based

on the researcher's reflections on the procedure. The data from the questionnaires and observation have been compared and analysed. The results have been complemented by a set of follow-up, ethnographic, telephone interviews with a sample of participants.

The study made it possible to evaluate participants' successes and difficulties in their use of the free software image-manipulation tool, the GIMP. All participants were able to cope with the task successfully. Participants discovered the open source and free software tools as a legal and manageable way to produce and publish digital content. The workshop had a positive effect on participants' confidence and motivation in using the GIMP and other free and open source software tools in the future. Many of them also stated that they had been able to acquire new skills and techniques through the online tutorials and the support of user communities. Free and open digital educational resources were recognised as beneficial for self-learning and skills development and thus for gaining new-media literacy that is essential for participation in the online public sphere.

The awareness of alternative to copyright licences is an essential part of digital literacy. Many of these licences, such as GPL – General Public Licence - or Creative Commons, grant the openness and freedom to use and distribute digital content. These opportunities for creativity, self-learning and acquisition of the technical skills were new to most of the study participants.

The qualitative experiment showed the benefits of introducing free and open creativity support tools to non-professional computer users with no expertise in creative or computer-related disciplines. The majority of participants stated the positive effect of the workshop in lowering the barrier to engaging with digital creativity support tools and online publishing. This illustrates the importance of free and open introductory sessions that provide essential new-media skills and inform about free opportunities for creativity, communication and self-expression in the digital environment. The ability to communicate using the language of the digital media is a prerequisite for a fulfilled life in a modern society.

This research has proved that everyday creative practices within digital networked environment have become an important part of modern social life. Although the huge wave of user labour in online space cannot be stopped, the free access to knowledge and tools for creativity and self-expression can facilitate a more balanced

rate of participation across the different parts of the population. Raising the level of digital competency can reduce digital content piracy and promote legal sharing of creativity products as well as their overall quality and creative value. Providing free opportunities for learning about specific software tools can facilitate further informal learning through participation in online environments and the acquisition of new skills through online resources.

Thesis outline

This thesis is divided into two sections. The first section, which covers Chapters 1 – 4, provides the theoretical context for the research questions, building a conceptual framework for the structures of user participation in online networks and the everyday and amateur creative practices that take place in this online environment. Every chapter presents theoretical insights into one of the key domains of this research. The objective is to establish a connection between the domains that lie within the scope of amateur and everyday creative practices, the participatory potential of digital technology and the issue of informal learning that takes place through participation.

Chapter 1 presents the theoretical and historical context of the concept of everyday creativity setting it within the broader and the most contested domain of creativity. Along with the overview of the major definitions, models and types of creativity, it distinguishes ‘everyday creativity’ as a particular sub-domain that is connected with the contemporary, digital-media-related, social practices of cultural production.

Chapter 2 engages with the participatory changes in the media landscape enabled by the development of the user-centred structure of the World Wide Web’s second generation (Web 2.0). The key aspects of digital technology as well as different models of user participation and production are discussed.

The new amateur practices enabled by the potential of digital technology for global connectivity and collaboration are explored in Chapter 3 from the perspective of serious leisure. Communities of practice in general and successful models of online communities such as Free and Open Source or Flickr are investigated for the opportunities of sociality and informal learning.

Chapter 4 deals with amateur photography, the transition to digital photography and image manipulation as an integral part of photographic practice.

The second section of this thesis covers Chapters 5 - 6 and comprises two empirical studies which aim to complement the theoretical insights developed through the research described in the previous chapters.

An exploratory survey of the computer-mediated, 'everyday', creative practices of a sample of ICT users is presented in Chapter 5. The chapter comprises the whole body of work relevant to the undertaking of the survey, including the objectives, methods, tools and procedures as well as the findings, analysis, discussion and conclusion.

Chapter 6 describes the qualitative stage of the research. It comprises a triangulation of qualitative data-collection methods in an experimental setting with a group of 'ordinary' unskilled computer users who have been using a free software image-manipulation tool, the GIMP, for a creative task. As with the previous one, the chapter depicts the whole research process related to this phase of the investigation.

The conclusion summarises the findings of the entire research, evaluating key contributions to the body of academic research on the potential of the participatory architecture of digital technologies for everyday creative practices, communication and informal learning. A summary of the findings from the qualitative study are also presented in the conclusion.

Chapter 1: 'Little c' Creativity in the Context of Everyday Life

We humans are often 'everyday creative', or we would not even be alive.
(Richards, 2007: 3)

In this chapter, the phenomenon of everyday creativity is explored as an inherently social and communicative process that relies on a wide range of factors through which the creative process becomes possible. Here, essentialist assumptions of creativity that regard certain types of creativity as a natural human ability are drawn upon in contrast to elitist conceptions that limit creativity to outstanding individuals and value only certain forms of creative expression (Pickering and Negus, 2004). In line with Pickering and Negus (2004), skill development through practice and communication of experience is considered as a necessary component of creative practices that lead to a greater mastery and quality of the outcome as well as to personal rewards.

Study and consumption of existing creative work is considered as an important part of obtaining domain-relevant knowledge that helps position the creator within a community of practice. Communities or social networks are discussed through the lens of a creative environment that provides tools, training, support, audience and judgment.

Everyday Creativity

Everyday creativity as an inseparable component of life has been recognised by many scholars. The terms used to describe the phenomenon include 'ordinary', 'mundane', 'everyday' and 'vernacular' creativity.

Creativity is a highly contested concept. There is a solid body of research on creativity going back in history to the ancient times. The conception has been approached from a number of disciplines and perspectives and has changed over time. Creativity is usually defined as an ability to produce novel or original, useful and high-quality work or ideas (Sternberg, Lubart, Kaufman & Pretz, 2005). The word itself comes from the Latin term 'creō' that means 'to create, to make'.

Gardner (1993) defines two distinct orders of creativity, 'little c' and 'Big C.' 'Little c' is a kind of creativity of which everyone is capable. There is no need to produce

outstanding results to be creative, it is about everyday creativity. In contrast, 'Big C', also called *eminent creativity*, is that which results in a contribution to cultural heritage and which is known widely. Similarly, big or high creativity has been described by Feldman *et al.* as: 'the achievement of something remarkable and new, something which transforms and changes a field of endeavour in a significant way [...] the kinds of things that people do that change the world' (Feldman *et al.*, 1994:1). By contrast, Craft sees 'little c' creativity as a more 'ordinary but lifewide attitude toward life' that is about 'acting effectively with flexibility, intelligence and novelty in the everyday rather than the extraordinary' (Craft, 2005:19). She defines it as: 'a sort of "personal effectiveness" in coping well with recognising and making choices [...]. A creativity of everyday life, or what might be called 'little c creativity' [...] in identifying and making choices, a person is inevitably self-shaping' (Craft, 2002:43).

Much of creativity research was focused on the eminent examples of creative genius. Providing valuable insights for understanding the exceptional, the 'Big C' creativity, those studies excluded the more common forms of 'little c' creativity of which everyone is capable.

From 1950 there has been a rise in creativity research initiated by J. P. Guilford's presidential address to the American Psychological Association where he drew attention to the need for scientific study of creativity, arguing that creativity was a vital "natural resource". He focused on discovering and fostering creativity in schoolchildren and establishing a relationship between learning and creativity. Guilford's address contributed to a radical shift from understanding creativity as a gift or extraordinary talent to the natural ability of all human beings that can be evaluated and fostered.

In 1958, Raymond Williams, whose work laid the foundations for cultural studies, made his famous claim that culture is 'ordinary'. He argued that culture should be defined as both (rather than distinguished between) a whole way of life with its common meanings, as well as the processes of discovery and creativity in the arts and learning. From this perspective, creativity is not only the elite 'Big C' creativity, but also an integral part of the mundane life of ordinary people. 'Ordinary' or 'grassroots' creativity that is observable in the most ordinary practices of everyday life – shopping, cooking, or walking around the city (de Certeau *et al.*, 1998) has been increasingly receiving attention within the domain of cultural studies. In his work 'Culture in the Plural' de

Certeau describes overall presence of creativity in the everyday life of modern society and the inclusive process of creation. He sees creation as a 'disseminated proliferation' that includes housing, clothing, housework, cooking and an infinite number of rural, urban, family or amical activities (de Certeau, 1997:139–142). Similarly, Richards (1998, 2004) argues that we use our everyday creativity throughout our lives, at work and leisure. She stresses that aesthetic concerns of creativity relate to more than just artistic practices. In the introduction to her book 'Everyday Creativity and New Views on Human Nature' she lists such activities as raising children, writing a letter to an editor, rearranging the room or landscaping the yard or doing any of the complex tasks that fill our routine as being equally creative and even of a higher importance for our daily lives.

Creative thinking is often seen as a natural ability for problem solving and improvisation that is essential for surviving and personal development. Runco (2007) describes creativity as an everyday phenomenon that 'helps each person cope with hassles, express him- or herself and adjust to changes. Not a day goes by, and perhaps not an hour, without the need for adjustment. In a sense, everyday creativity is a domain within which we all perform' (Runco, 2007:93). Zausner (2007:76) also describes everyday creativity as our natural response to life whereby every choice and decision we make has a creative basis. Richards goes further by defining our everyday creativity or our 'originality of everyday life' as a universal survival capability: 'Our creativity may increasingly become a primary driver for much that happens in our world, and with us' (Richards, 2007:11). She claims that the abilities for improvisation and adaptation are essential to survive in an ever-changing environment. Hallam and Ingold consider creativity from the anthropological perspective as cultural improvisation. They stress that improvisation and creativity 'are intrinsic to the very processes of social and cultural life' even if it happens 'against the conventions of culture and society' (Hallam and Ingold, 2007:19). They make an important point about improvisation describing it as 'the way we work' not only in our everyday lives but also in our reflections on these lives which result in creative output. Bruner, in his epilogue to a collection of essays on anthropology and creativity, writes: 'people everywhere construct culture as they go along and they respond to life's contingencies' (Bruner, 1993:326). He sees improvisation as a 'cultural imperative' (Bruner, 1993:322) because no established system of codes, rules and norms can anticipate every possible circumstance of life.

Over the last two decades, everyday creativity has been recognised as an essential component of our daily lives that helps us to live more effectively, handle problems and personal-social affairs and find solutions that provide a more comfortable and satisfying lifestyle. This is something of which all humans are capable in some degree (Ripple, 1989). From the psychological perspective, Ripple (1989) argues that the potential for creative thinking exists to a greater or lesser degree in everyone. He claims that 'creativity results from ordinary people thinking in identifiably unique ways when they meet everyday problems in real-life situations'. He believes that human abilities can be identified and classified in various ways, which include a creativity dimension. Pickering and Negus (2004) see creative practices as being inseparable from mundane life. For them, although every creative thought comes into existence out of the daily routine, the creative act needs to be distinguished from the everyday experience. They see creativity as a 'conceptually identifiable phenomenon' that can be measured, assessed and facilitated through training. This idea had been proposed earlier by Torrance (1972). The Torrance Tests on Creative Thinking are still widely used for various creativity training programmes and research projects.

If previously the term creativity was a mainly artistic attribute, today it is also recognised as a successful strategy for business development. Creative thinking, problem-solving and effective decision-making courses are integrated into the business-related educational curriculum. Students learn to approach a problem from different perspectives, often utilizing de Bono's popular and very effective method of the six thinking hats (De Bono, 1985).

Modern society is making its next step in evolution by utilising creativity as the driving force for progress. At this stage, Henry Bergson (1907), the French philosopher cited at the beginning of this chapter who believed human creativity to be responsible for individual and social development deserves consideration. He stressed that 'ordinary' creativity and self-expression, the growth of personality through conscious effort, makes the world a better place in which to live.

Most democratic conceptions of 'little c' creativity agree on the ubiquity of everyday creativity that is incorporated into the dynamics of living. Some scholars emphasize the social role of creativity (Amabile, 1996; Csikszentmihalyi, 1996; Pickering and Negus, 2004) with its potential for fundamental transformation on both the individual

and cultural levels. The assumption that 'little c' creativity is a natural human ability that can be discovered, tested and fostered leads to a range of questions that include motivational factors for creativity as well as possibilities for learning and development.

In the domain of digital technologies, Jean Burgess (2007) used the term 'vernacular creativity' to define the engagement of 'ordinary' people with everyday cultural production. In her work, she distinguishes 'vernacular' from the 'exceptional', 'high', or 'proper' creativity. Burgess defines 'vernacular creativity' as 'cultural practice outside the symbolic boundaries of official art worlds' and emphasises the 'ordinary' nature of this concept. In her doctoral dissertation, Burgess investigates the emerging structures of cultural participation based around vernacular creativity and new-media forms that lead to 'cultural citizenship' as a new dimension of a democratic society. She writes:

I suggested that if 'ordinary' vernacular creativity does have the potential to contribute to public culture, then its emergent forms and practices must also have implications for cultural citizenship, where cultural citizenship is understood as the practice of active participation in the cultural public sphere (Burgess, 2007:250).

To test her hypothesis, Burgess (2007) conducted case studies of the Flickr community and Digital Storytelling projects. She points out that remediation of vernacular creativity begins when individual work is uploaded or shared, 'transforming from one-to-one private forms of communication to public vernacular culture'. For Burgess, both Flickr and Digital Storytelling are, among other things, 'spaces in which individuals can represent their identities and their perspectives on the world, engage with the self-representation of others, collaborate to produce significant contributions to public culture and encounter cultural difference' (Burgess, 2007:253).

Burgess was one of the first researchers who raised the issue of the emerging structures of participation in the digital online sphere. For her, these new forms, or remediated old forms, of the everyday creativity of 'ordinary' people facilitated through new-media participatory opportunities, open up spaces for the practice of cultural citizenship.

The issue of everyday creativity is becoming more obvious and the new media technologies play a significant role in the increasing awareness of the mundane media practices of 'ordinary' people. The phenomenon of bottom-up creative practices within the digital environment will be elaborated in Chapter 2.

Personal Creativity and Implicit Theories

This research focuses on the ground-level creative ability that every individual possesses (Amabile, 1983; Cropley, 1992; Treffinger, Isaksen & Dorbal, 1994). It is concerned with 'little c' creativity (Gardner, 1993) or P-creativity (Boden, 1990), where the creative process implies novelty for the creator, but not the whole universe. This can be called 'everyday', 'ordinary', 'mundane', 'amateur' or 'folk' creativity that involves everyday problem-solving and creative expression.

Everyday creativity is a social and a very personal concept. After a brief overview of theoretical notions of everyday creativity in academic literature, personal concepts of creativity will be explored. As creativity is a very broad multi-faceted term, it is not uncommon that every person has his/her own idea of creativity. These personal concepts are known in academic literature as implicit theories.

People often link creativity to arts and artistic abilities. Thus, some highly productive people are believed not to be creative because they are unable to draw a picture. For instance, in the survey on everyday creativity described in Chapter 5, one of the participants with a PhD degree who had written several books on historical research answered the survey questions on creativity by saying that he is "not creative at all" and not involved in any creative activities. This is only one of many examples of a very narrow concept of creativity that exists among the general public.

Another example for the wide range of personal beliefs on creativity illustrate findings by Gandolfo and Grace who, during their research project on *The everyday creativity of women craftmakers*, filmed narrative interviews with 15 female amateur craftmakers in Australia. It was found that for each woman, creativity had a slightly different form and expression. Some saw it as a play, expression, absorption others saw creative activities as challenging or relaxing. Gandolfo and Grace (2010:34) write in their report, 'some women are reluctant to call themselves creative but once they begin

to speak about their craftwork they acknowledge that it is for them a form of creative expression'. Among other aspects, participants saw craft as a form of personal creative expression that brings pleasure and joy and tightens familial and social connections. In the last twenty-five years, there has been an increased interest in the study of implicit theories. Several studies were conducted to explore the perceptions of creativity of general public. In psychological literature, implicit theories are called beliefs and indicate the perceptions of the world that people have in their minds (Runco, 1999). They are 'conceptual rather than empirical' (Runco & Bahleda, 1986:93). Research on implicit theories has shown that we hold theories that are not formal but serve as criteria in identifying, perceiving and describing our personal abilities and behaviour and that of others for attributes such as affect, intelligence and achievement (Sternberg, 1985). According to Runco, implicit theories are 'opinions and views held by people other than scientists' that 'reflect a kind of tacit knowledge, which is quite common' (Runco, 1999:27). He stressed the importance of understanding implicit theories because they are part of socially-defined standards used for making judgments, including judgments about creativity, which are related to people's expectations that have an impact on development and behaviour (Runco, 1999:28). Certain people's actions and ideas are often defined as 'creative' by their colleagues, friends or relatives even if they are not widely famous or unique. According to Ripple (1989), we identify and rate such people through our judgments of them based on informal observations and assessments in the course of our daily interactions.

Research on implicit theories of creativity has found that people do hold concrete theories that they use as a guide to judge creative individuals or products (Sternberg, 1985; Runco & Bahleda, 1986). The studies have also found that implicit theories of the creativity of lay people and creative professionals mostly overlap, which indicates that the criteria are more culture-related than arising from personal background.

Runco and Bahleda (1986) investigated individuals' implicit theories on creativity in various domains: artistic, scientific and everyday creativity. They asked artists and laypersons to generate lists of characteristics related to the various types of specific creativity domains. Although a high degree of consistency could be found in the definitions, each group gave a specific set of attributes for each domain of creativity.

The artists described artistic creativity as expressive, imaginative, humorous, open-minded, unique, emotional and exciting. The laypeople described artistic creativity using characteristics such as imagination, expressiveness, intelligence, originality, perceptiveness and superior drawing ability. Scientific creativity was described similarly by the artists and the laypeople as perfectionistic, intelligent, logical, curious, patient, thorough, intuitive and problem-solving. Beyond this, the artists defined everyday creativity using adjectives such as active, helpful, humorous, resourceful, open-minded and exciting. However, the laypersons used a different set of attributes to describe everyday creativity, describing the everyday creative person as imaginative, having common sense, being organised, active and able to cook well (Runco & Bahleda, 1986).

Differences in implicit theories concerning creativity can be found in cultural studies. Thus, in his study of creativity in China, Gardner notes that creativity is understood in China as nothing radical or exceptional, but 'rather as a modest, continuous and cumulative alteration of existing schemes or practices' (Gardner, 1989a:127). The Chinese culture over-emphasises skills development, paying less attention to typical Western attributes of creativity such as individual exploration and freedom of expression. Nevertheless, this approach appears to be effective in the Chinese cultural domain as it leads to creative ideas and products. Gardner (1989) describes Chinese students who are reared in a strict, skill-oriented *milieu* and yet go on to become creative artists, scientists, or businessmen. In contrast, the western approach to creativity is individualistic and exceptional.

Implicit theories are especially relevant for the domain of everyday creativity that functions on the 'ordinary' level of everyday actions. Implicit theories provide a view of creativity 'from within', from the perspective of 'ordinary' people as opposed to the established theories of academic scholars and creative professionals. When talking about creativity, it is important to take into account the diversity of concepts and meanings that are considered to be connected with the term creativity. Therefore, it is reasonable to consider implicit theories on creativity in research projects that include working with human participants.

Factors facilitating creativity

Ability and motivation have traditionally been considered as factors that predict creativity. Since the 1950ies, research on creativity has recognised that talent is just a part of creativity whereby domain-relevant skills and mastery play a considerable role in the creative process. In his 'Lectures on Aesthetics', Hegel made a point that 'even if the talent and genius of the artist has in it a natural element, yet this element essentially requires development by thought, reflection on the mode of its productivity, and practice and skill in producing' (1975: 27).

From the psychological perspective, Amabile argues that 'creativity is best conceptualised not as a personality trait or a general ability but as a behaviour resulting from particular constellations of personal characteristics, cognitive abilities and social environments' (Amabile, 1983:358). Creative ability requires domain-relevant and creativity-relevant skills (Amabile, 1996). In other words, the expertise in a relevant field in combination with the creative ability or 'talent' for that field underpins the creative process (Amabile, 1983). Domain-relevant skills comprise 'the individual's complete set of response possibilities' (Amabile, 1983:358) which comprise knowledge about the domain, including facts, paradigms, aesthetic criteria and technical skills (Brown, 1989). Amabile (1983) specifies innate cognitive and physical abilities in combination with formal and informal education as the defining factors for domain-relevant expertise. Creativity-relevant skills include cognitive and personality characteristics that enable idea-generation and a creative approach. For Amabile, it depends on training, experience and personality traits. In line with Amabile, Pickering and Negus (2004) demystify most of the creative genius arguing:

Cultural creativity comes with practice and the learning of certain skills, with development by thought and reflexive thinking about its modes of practice, its set parameters, its unconsidered conditions and possibilities
(Pickering and Negus, 2004:112).

They point out that every creative act does not exist on its own but is based on existing tradition being original or novel only in relation to what has been done in the past.

Pickering and Negus (2004) developed an approach that sees creativity as both ordinary and exceptional. They highlight the role of ability and skill as a basis for a fulfilled creative experience. They argue that achieving creative competence relies on recognizing and following established rules and conventions that serve as a basis from which 'people shape cultural resources to new purposes' (2004:17).

Skill development and positioning creative practices within existing traditions and building upon them have been recognized as essential enablers of creativity. Motivation is considered as another key component that facilitates creative practices. According to Maslow's Hierarchy of Human Needs (1954), we are motivated through our needs ranging from basic ones like food and shelter to higher ones such as gaining recognition, connecting with others or personal development. Vroom (1964) stresses the importance of goals as the main driver for human effort.

In psychological research, motivation is differentiated as being intrinsic or extrinsic. Intrinsic motivation comes from an inherent interest, involvement or personal challenge represented by the task. In the case of creativity, intrinsic motivation refers to the process of creation, when the author enjoys the act of creation and works for pleasure and not for the outcome (Amabile, 1983). Everyday creativity is an example of such process-focused creativity that is merely intrinsically motivated. Extrinsic motivation refers to external goals, such as money or other rewards. Intrinsic motivators are highly conducive to creativity, while purely extrinsic motivation will decrease creativity (Amabile, 1983; Amabile & Conti, 1997). Thus, although intrinsic creativity is primarily motivated through the joy of the process, it can achieve more creative results than the reward-orientated, extrinsic creativity. However, 'extrinsic constraints will, by impairing intrinsic motivation, have detrimental effects on creative performance' (Amabile, 1983:365). In other words, the level of each type of motivation affects the overall creative effort put into a specific task. If an individual is interested in the task itself and in the reward, that, according to Amabile's theory, should result in exceptional creative outcomes.

One of the main obstacles to creativity is fear – fear of making mistakes, fear of the unknown and fear of rejection (Seaward, 2006). Often, when people say that they are not creative, it means that they are afraid of exploring a new field and, more important, of a failure. 'Fear of failure can paralyze the creative thought process'

(Seaward, 2006). People not used to discovery may not have the confidence to try out new ideas, concepts and tools – the things essential for creativity. Among them are people who did not have the opportunity to develop creativity-relevant and domain-relevant skills in formal or informal education.

Seaward (2006) believes that confidence-building and training can help to alleviate or resolve fears and, thereby, enhance creativity. According to Bohm, ‘all learning involves trying something and seeing what happens. If one will not try anything until he is assured that he will not make a mistake in whatever he does, he will never be able to learn anything new at all’ (Bohm, 1998:4). Hence, it is important to provide opportunities to make real discoveries – to learn from personal experience. Successful experiences contribute to building self-confidence. People need an environment that encourages them and acknowledges their creative efforts. Therefore, it is important to provide hands-on opportunities in the form of e.g. workshops or seminars that can help people not only to discover and foster their creative abilities but also to apply them in everyday life. Replacing the fear of failure through experience of success can serve as a basis for further creative efforts. Personal rewards from the creative process through the moments of joy and a self-absorbed flow serve as a motivation to proceed with the creative activity and acquire domain-specific skills and knowledge that, in turn, allow for ‘this dreamlike or mysterious sense of being at one with and receiving artistic ideas’ (Pickering and Negus, 2004:39).

Contemporary conceptions of creativity include personal characteristics, such as talent and cognitive skills and abilities. Although these domains are interconnected, it is important to distinguish between the skills that can be learned and trained and a natural talent that relies on those skills but is merely an inborn trait. According to that, it is possible to learn to be more creative by enhancing our cognitive abilities and learning techniques of creative thinking.

To sum up the above overview of factors that facilitate creativity I refer to Baron (2014) who lists five steps and conditions:

1. Obtaining a broad knowledge base that prevents “re-inventing the wheel” and allows coming up with an original and novel idea in relation to existing work.
2. Adopting an appropriate thinking style that helps to escape from existing mental ruts and provides more freedom for inventive thinking.

3. Developing creativity-enhancing personal attributes as willingness to take risks and to tolerate ambiguity.
4. Having high motivation that is seen as a prerequisite for creativity.
5. Seeking environments that encourage rather than discourage creative ideas.

While the first four conditions that include cognitive abilities, personal attributes, creativity-relevant and domain-relevant knowledge and motivation have been described above; I would like to look closely at the last point - the creative environment - that has not been mentioned yet.

A creative environment is one of the four components (4Ps) of creativity proposed by Rhodes (1961)⁵. Sternberg and Grigorenko (1997) define a creative environment as the physical, social, and cultural environment in which creative activity occurs. They emphasize the strong influence of the environment on the extent to which we are able to utilise and develop whatever genetic potentials we have. Csikszentmihalyi (1996) sees the environment as an important component in creativity since it can stimulate or trigger creative thinking - get the creative person started on a creative process - and enable or support creative flow. Moreover, he believes that 'it is easier to enhance creativity by changing conditions in the environment than by trying to make people think more creatively' (Csikszentmihalyi, 1996: 1).

Some researchers (Geis, 1988; Couger *et al.*, 1993; Williams and Yang, 1999) focus on organisational elements ensuring a creative climate; like for instance having a managerial willingness to take risks in order to enable creativity and innovation, or providing people with formal and informal training to enhance creativity (Geis, 1988). Others, like Csikszentmihalyi (1996), focus more on the 'spatiotemporal context' - the shape and design of the physical environment.

Along with the psychological and physical environments, an important aspect for creativity is the social environment. Some theorists view creativity as an inherently social process. Grounded in cultural studies, Pickering and Negus (2004) approach creativity primarily as a social communication, the communication of experience, as a process that

⁵ Rhodes' examination of the broad spectrum of academic writing on creativity revealed four fundamental dimensions of the concept: creative *Person*, creative *Process*, creative *Product* and creative *Environment* (Press), which nurture creativity.

brings that creative experience into meaning and significance in a way that can be shared between people. 'As creativity is a social process entailing a dynamic of according value and receiving recognition, we can say that it is never realised as a creative act until it is achieved within some social encounter' (2004:23). For Pickering and Negus (2004), creativity entails a communicative experience that connects the creator and the receiver in the activity of 'interpretation, exchange and understanding' (p.23). Without communication a creative process is never complete. Pickering and Negus' inclusive approach defines creativity as communication of experience that is an inherently social and collaborative process.

Perry-Smith and Shalley (2003) explored the relationship between creativity and social connection within and outside the organisation. 'Communication with others in the domain should enhance one's understanding of the area and facilitate the generation of approaches that are feasible and appropriate, but also unique' (p.91). They emphasize the role of communication between people as they exchange information, ideas and experience that lead to original approaches and solutions. Perry-Smith and Shalley (2003) divide social connections into strong ties and weak ties whereby weak ties are more likely to facilitate creativity than the strong ties. Those involved in a close relationship usually share similar views and perspectives that are less challenging for the generation of new ideas. In contrast, weak ties may establish unexpected connections and in that way lead to novel and original ideas (Perry-Smith and Shalley, 2003).

In his study of 'Art Worlds', the sociologist Becker (1982) describes the making of art as a social process that relies on collective action. His 'Art Worlds' consist of all the people whose activities are necessary to the production of the characteristic works which that world, and perhaps others as well, define as art' (Becker, 1982:34). He argues that the whole process from idea generation to production and distribution is a collaborative process that involves a whole range of activities of a large number of people and is merely a division of work. He distinguishes between the core activity that requires artistic ability and the support activities that allow this artwork to come into existence. These involve the production of tools necessary for the artistic process, support, training and distribution. Becker (1982) claims that the status of an activity can change over time. Some activities that previously were regarded as purely technical are

today recognised as artistic. To illustrate such development, Becker provides an example of sound mixing that once was a mere technical speciality but now is an integral part of music making as an artistic practice. He sees the basis for a distinction of art and non-art arising from the consensus of the participants in an art world 'about the basis on which it is to be judged and through the application of the agreed-on aesthetic principles to particular cases' (1982:134). According to this, a creative work obtains an aesthetic value and a social meaning only when communicated and shared with other people. Those participating in art worlds 'rely on earlier agreements now become customary, agreements that have become part of the conventional way of doing things in that art world' (1982:29).

Society in which the creative act comes into existence, including the whole process from idea generation to distribution, can be regarded as a creative environment that provides a network of support, commodities and tools and opportunities for distribution as well as a basis for creating meaning, acceptance and recognition of a specific creative work and the creator. Although such an environment is subject to change over time, it enables and nurtures creativity, as no creative activity is possible in a vacuum.

Similar to Becker's perspective, Csikszentmihalyi (1997) describes the creative process as a complex system that depends on the cognitive and physical abilities of the creator, interaction between individuals, a field of experts and cultural knowledge. The social norms that serve as a basis for the creation and acceptance of creative work encompass the rules and practices of a specific domain and the language and symbols used for communication and production of meaning in that domain. They are also embodied in creative works that already exist and have been socially accepted (Paton, 2011). The model proposed by Csikszentmihalyi (1997) places an equal emphasis on the role of the domain and the role of the individual in the creative process whereby it is the interaction between the two areas that leads to a creative outcome. In other words, a creative individual needs to learn the rules and master the knowledge and skills of the domain to be able to contribute to it.

In the case of everyday creativity that is mainly intrinsically motivated, people may not aim to contribute original ideas and knowledge but they pursue their creative activities for pleasure. However, in this case they do need to acquire knowledge and

skills that help them to execute their creative intention. The social network plays an essential role in everyday creative practices as it provides the necessary creative environment in terms described above. For instance, hobby photographers often use professional equipment, read magazines and other relevant literature, visit exhibitions, communicate with other hobbyists and professionals and publish their work in online exhibition spaces, social networks and offline media. Such leisure creative activity is enabled, facilitated and judged by a large network of social connections that are directly or indirectly related to the domain of photography.

Acquisition of domain-specific knowledge occurs through person-to-person communication, the reading of related literature and the observation or study of existing work. The latter is crucial as it allows the individual to position him- or herself within the existing domain, to understand the rules and the language used in this domain and to prevent the 're-invention of the wheel'. Even if a creative activity is pursued for pleasure, at the time the outcome is published or showed to other people it becomes public and thus subject to social judgement. The novelty and originality of new work is always judged in relation to what has been done before. From this it appears that the study of existing creative work provides an essential basis for the generation of new ideas and for cultural contribution.

Paton (2011) points to the 'usefulness of examining creators within the social and cultural contexts they inhabit as they create'. According to her view, the rules and conventions of a specific domain are not only passed on verbally, or through training, but are also embodied in existing work. Consequently, she sees media consumption as an important part of a production process. In her study of the influence of media consumption on media text creators, Paton (2011) found that reading has a considerable impact on writers' creativity. Nevertheless, other factors, such as 'the real and imagined audience, feedback and books sales' needs to be considered. Her findings complement the systems model of Csikszentmihalyi (2007) with a factor of media consumption as 'a significant but not sole component of a creative process'. She argues that media usage can be considered as influential only alongside individual characteristics in connection with other social factors such as upbringing, education, support and social judgment. Paton (2011) warns against focusing on single components in isolation. In contrast, she emphasizes the necessity of an interdisciplinary or multi-componential approach that

places creativity within a broader social and cultural context in order to understand how creativity occurs and how it can be facilitated and improved.

Paton's (2011) findings confirm that no artwork exists in isolation. It is created by an individual or a group, enabled through the support of a broader social network and shaped by the *zeitgeist*. Consumption of existing work is an important part of the creative process that helps practitioners to understand rules and master the skills as well as to create a basis for new ideas. Nevertheless, there is a danger of influence that distracts an individual from his or her personal experiences into the already established direction. Thus, consumption of existing creative work may also reduce the chance for the development of original and novel ideas.

Paton's (2011) findings contribute to the existing body of work on the dialogue between production and consumption of creative work. Some scholars (Bourriaud, 2002; Nakajima, 2011) see consumption of artwork as a process that completes production 'by blurring the line that separates creative artists from their viewers or audiences' (Nakajima, 2011: 551). According to this perspective, an artwork is consumed and interpreted by audience engagement and therefore, the meaning of art is socially constructed (Bourriaud, 2002).

To sum up, this chapter has provided an overview of everyday or the 'little c' creativity - the natural human ability that is employed within the contexts of everyday life.

A brief discussion of implicit theories was intended to point out the fluidity of the concept of creativity that is understood in different ways by different people.

Everyday or personal creativity relies on personal characteristics as well as creativity-relevant and domain-relevant skills. Personal characteristics such as talent and willingness to take new paths may be of a genetic and environmental origin and are therefore difficult to change. Creativity-relevant and domain-relevant skills that encompass certain techniques, skills and knowledge can be trained and learned. Among factors that enable and facilitate personal creativity are: motivation, domain-relevant and creativity-relevant skills, personal characteristics as well as a creative environment in terms of the physical and social environments that provide support, audience, judgment and recognition.

Chapter 2: Situating Grassroots Participation and Content Production in Web 2.0

Not every member needs to contribute, but all need to feel that they are free to contribute when they are ready and that what they contribute will be appropriately valued. In such a world, many will only dabble, some will dig deeper, and still others will master the skills that are most valued within the community (Jenkins and Bertozzi, 2007:148).

The growing ubiquity of digital technologies and the Internet initiated radical transformations in how media is produced, consumed and distributed. Personal computers connected to the global network enabled bottom-up cultural production and participation. In response to this shift, new economic models emerged, that support and rely on the aggregation of individual contributions and collective effort. The digital environments enabled through the participatory architecture of Web 2.0 are used by a growing number of people as spaces for cultural production, participation and communication. This initiated a shift from passive audience to active production, from individual to collaborative effort, and from personal to social and shared spaces. The use of digital technologies ‘helped to redefine the nature, organisation and identity of communities’ (Bitton et al., 2011:2) as well as enabling the emergence of new community types – online communities of practice. Wenger (2006) identifies communities of practice as ‘groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly’. For him, although learning is part of participation in a community of practice, more important is the generation of newer or deeper levels of knowledge through collaborative group activity (Wenger, 2002).

This chapter examines the problems and implications of the participatory shift initiated through digital technologies in relation to cultural production, everyday life and personal creativity, as well as ‘present current forms of enabled collective actions aimed at social change’ (Bitton et al., 2011:2). The relationship between everyday creative practices and the uses of digital technologies when exploring users’ perspectives on

use, the nature of this use, motivations for this use, the potential for learning as well as personal and social implications are examined closely.

Chapter overview

This chapter begins with a brief overview of the key characteristics of digital media and its potential for grassroots media production and participation. It also looks closely at different types of participation and user-generated-content in the new media environment and especially in online communities and social networks. Further, it discusses the interconnection between consumption and production of digital content as well as collective and collaborative models of production. It also highlights how the use of digital technologies has helped redefine the nature of communication and media use as well as enabled the emergence of new types of collective action that take place within online communities.

Key characteristics of digital media

As the mass-production of newspapers and magazines in the early twenties and the introduction of television sets in the thirties had groundbreaking cultural implications, so the mass computerisation of today is 'seen as part of a much larger landscape of social, technological and cultural change; in short, as part of a new technoculture' (Lister et al. 2009:11).

The shift to digital algorithms of data capture, representation, storage, access and manipulation accounts for qualitative changes in the production, consumption, reception and use of media (Lister et al. 2009). The bottom-up media participation with the emerging practices of digital cultural production is the main quality that distinguishes the new digital media from the older, passive, forms of media consumption. 'New media' is a very general and abstract term that 'offers to recognise some big changes, technological, ideological and experiential, which actually underpin a range of different phenomena' (Lister et al. (2009:12). The use of the term is often confusing as it refers to a variety of communication and information technologies. Some may talk about online services while others mean mobile devices or digital TV. Nevertheless, the inclusiveness

of the term 'New Media' makes it convenient to refer to a new generation of computer-based information and communication technology that shares a set of characteristics that distinguishes it from other media forms. It is digital, interactive, networked and not linked to a specific platform or device. The numerical nature of digital data in connection with the global network allows immediate access, production, manipulation, remixing and distribution of digital content. Through the decentralised and participatory architecture of the online environment, a non-linear and a non-hierarchical 'many-to-many' model of communication between users becomes possible. These key characteristics have enabled a participatory shift in the use of new media.

The introduction of a unitary algorithm for the numerical representation of data was groundbreaking for the emergence of new digital media. First text, then sound and graphics have become encodable. If analogue media tend towards being fixed, digital media tend towards a permanent state of flux (Lister et al., 2009:19). The fact that all digital media are based on the same binary code allows them to be represented on any computer or other digital device. The media is not bound anymore to 'material' objects such as paper, vinyl or cassettes. It can take any material form if necessary, for instance printed or recorded to a CD or stored digitally on a computer hard drive. In turn, analogue media can be converted to a digital representation. Digital media can be copied without losing their quality, they are non-linear. Any data element can be accessed separately. Therefore, it can be more easily manipulated than analogue forms (Lister et al., 2009:18). Numerical data can be transferred to another storage medium or sent over a network to a distant computer. In fact, 'digital' means numerical data that is being processed on a computer. However, today, it has a considerably broader meaning. Charlie Gere (2002) uses it as a culturally significant, unitary term for the various media we use. 'To speak of the digital is to call up, metonymically, the whole panoply of virtual simulacra, instantaneous communication, ubiquitous media and global connectivity that constitutes much of our contemporary experience' (Gere, 2002:11).

Lev Manovich (2001) in his book "The Language of New Media" defines new media as a mix between two distinct sets of cultural codes: on the one hand, the conventions of existing 'old' cultural forms of data representation and, on the other hand, the conventions of the computer dimension and HCI (Human-Computer-Interaction) at the current stage of its development. He claims that the key principles of computer

technology (such as the sending and receiving of data packets transmitted through a network) affect the cultural dimension of new media, its organisation, its contents and emerging genres. These processes result in a new 'digital culture' based on HCI, where computers are increasingly used to represent traditional cultural forms as well as the emerging new forms of cultural production.

For Manovich (2005), although remixability benefits from digital modularity, it does not necessarily rely on it. He argues that the number of objects that can be created in a modular system is limited as only a certain number of combinations of the modules are possible. Instead, Manovich offers a contemporary model of remix where new objects are not created from the preliminary, a priori, defined modules, but based on the existing objects. 'In this scenario, any well-defined part of any finished cultural object can automatically become a building block for new objects in the same medium. Parts can even "publish" themselves and other cultural objects can "subscribe" to them in the way you subscribe now to RSS feeds or podcasts' (Manovich, 2005). The 'grassroots' cultural production based on the commercial culture is not a new phenomenon. For instance, since the emergence of audio- and video-tapes as data storage media, fans have started sampling their favourite music or movies to produce their own modifications. However, since the emergence of the computer and the shift to digital representation, the media when accessed on a computer, have lost their material shape.

'... computerization modularizes culture on a structural level. Images are broken into pixels; graphic designs, film and video are broken into layers. Hypertext modularises text. Markup languages such as HTML and media formats such as QuickTime and MPEG-7 modularise multimedia documents in general' (Manovich, 2005).

A digital media object can be easily split into parts; combined with other objects, its form, colour and sound can be manipulated; it can be copied and distributed without loss of quality. Manovich (2005) argues that modularity is one of the principles of the computerised media. The Web is a core instance of the new media, which, through its decentralised interactive structure, creates the basis for remixability and modularity. For Lister et al. (2009:21), 'interactivity' stands for a more powerful sense of user

engagement with media data, a more independent relation to sources of knowledge, individualised media use and greater user choice. The networked, online, public space enables immediate communication and sharing between users; it offers a set of tools to access, manipulate and share digital data. Contemporary digital media is not a 'mass' media, but one that, due to its modularity, offers consumers a wide range of choice and customisation possibilities for the individual representation of content.

Digital data is never fixed. Millions of copies and derivations are spread over the global network. There is no linear connection between the author and the audience. Once the data has entered the World Wide Web, it will continue its digital life taking new forms and changing environments. The online space is a pool of collective knowledge to which everyone is free to contribute.

This phenomenon is well summarised by Pierre Lévy:

'The established differences between author and reader, performer and spectator, creator and interpreter become blurred and give way to a reading writing continuum that extends from the designers of the technology and networks to the final recipient, each one contributing to the activity of the other – the disappearance of the signature' (Lévy, 1997:366).

The decentralised and participatory structure of the new media enables a democratic 'many-to-many' model of communication, whereby consumption has become a part of production and producers of online content are at the same time users of online services and data. Due to the fluidity of digital representation, every new contribution does not exist in isolation, but is built on the existing work that is available in the online pool of collective knowledge that can be accessed from a variety of devices.

Media Convergence

The development of the dot-com infrastructure as we experience it today reveals a different tendency – media convergence. In his book 'Convergence Culture' (2006), Henry Jenkins writes about the emerging convergence paradigm that assumes that old and new media will interact in ever more complex ways.

'By convergence, I mean the flow of content across multiple media platforms, the cooperation between multiple media industries, and the migratory behaviour of media audiences who will go almost anywhere in search of the kinds of entertainment experiences they want' (Jenkins, 2006:2).

Jenkins sees convergence as the inevitable technological, industrial, cultural and social changes that occur with the help of old and new media producers looking for new forms for the entertainment industry. 'Digitalization set the conditions for convergence; corporate conglomerates created its imperative' (Jenkins, 2006:11). He cites the Cheskin Research report of 2002: 'the old idea of convergence was that all devices would converge into one central device that did everything for you (à la universal remote)'. However, the complexity of the needs and expectations we set for technology requires individual, customisable solutions for different users and situations. Furthermore, although consumers primarily use a specialised media device for their needs, other 'black box' devices that perform the same task can be used to suit their current situation.

Due to the increasing incorporation of portable technology into daily life, convergence occurs in high-end mobile products. Since mobile technology has evolved in the past decade, each generation comes equipped with more-advanced additional functionality, such as multimedia services, GPS receivers, Internet access, data storage and security mechanisms, in a single unit. These intelligent mini-devices capable of almost everything are called 'Smartphones' and offer a new dimension of social interaction to people 'on the move'. The portable devices provide a user with permanent connectivity to the global network as well as access to personal data at any time and place.

The growing mobility and decreasing size and cost of electronic chips make them pervade our lives, making it more comfortable and us more multi-tasking. However, the other side of such a pervasion - or as Rheingold calls it the 'social-side effects' of technology - is the increasing transparency of our lives in that 'the virtual, social and physical worlds are colliding, merging and coordinating' (Rheingold, 2002:xviii). The state of being permanently online and reachable, the readiness to read instant messages and e-mails has become a modern social norm. Despite all advantages that

such instant communication flow can bring, the downside is that personal life is not private anymore. Even if a user does not update his or her status every hour, such services like Google track and save one's geographical location. All digital devices, and especially the mobile ones, transmit loads of data to manufacturers and service providers. These processes are usually not visible to the average user.

Jenkins also sees media convergence as more than simply a technological shift. 'Convergence alters the relationship between existing technologies, industries, markets, genres, and audiences' (Jenkins, 2006:15). He points out that convergence is an on-going process which leads to the convergence culture in which we are living today. 'Convergence doesn't just involve commercially produced materials and services [...] It also occurs when people take media in their own hands' (Jenkins, 2006:17).

Communication technology adoption is a social process that brings new cultural norms into existence. The ubiquity of computers, mobile phones and other digital devices connected over the global network leads to the fact that we increasingly rely on them. The new tools re-shape our behaviour, eliminating some old habits and creating new. New habits demand even better and more sophisticated tools to fulfil the requirements of advanced technology users. The needs that are created through the process of technology adoption can be seen as one of the main drivers of technological innovation. The products of innovation affect the existing social processes that in turn, cause new behaviours and needs. Consequently, digital technology shaped by society has become an integral part of modern life. Charlie Gere (2002) sees 'digitality' as an attribute of contemporary life: Digitality can be thought of as a marker of culture because it encompasses both the artefacts and the systems of signification and communication that most clearly demarcate our contemporary way of life from others (Gere, 2002:12).

The pervasive nature of digital technology throughout the canvas of everyday life initiates a transformation of existing work and communication patterns. The possibilities of convergence and integration that digital technology offers have enabled its dominance of the technical developments in media and communications (Gere, 2002). The invention of 'digital' media brought into existence new forms, such as computer games, virtual reality, digital television, mobile phones and the Internet. These technological advances in their turn affect norms, habits and customs in a society. For instance, many modern youngsters prefer computer games to playing outside with

friends. In Japan, many couples have distant relationships where modern communication technology enables them to stay in touch permanently. They wake up, work, watch movies, play games and go to bed 'together' while 'real life' meetings may be months apart. A website dedicated to the topic - www.longdistancerelationships.net - suggests creating a sense 'of being in the world together' by chatting on a phone headset while doing the laundry or cleaning. As a result, an increasing number of people live their 'social life' in front of computer screens. These radical changes have been enabled through the user-centred participatory architecture of Web 2.0.

Participatory shift through Web 2.0 technology

The rise of digital networked technology – personal computers, mobile devices and the Internet - is often being celebrated as a revolution that enabled the democratisation of media and user empowerment. The invention of Web 2.0 is often seen as a breakthrough for user participation. However, early computer networks as ARPANET and FIDONET already offered the means for user participation and collaboration. With the emergence of the Internet and increasing ubiquity of computer technology more users had physical access to the global network. Despite that, only a small group of professionals were able to produce and publish digital content. The early web is seen as being read-only for the majority of 'ordinary' non-professional users.

The term Web 2.0 was coined by Tim O'Reilly in 2005 to describe the transition of the World Wide Web to a 'participatory architecture' created by web enterprises that require, invite and facilitate active user participation, communication and content production. It is a new business model that is based on 'customers ... building your business for you'. According to O'Reilly (2005), Web 2.0 is a platform that offers a 'built-in ethic of cooperation, in which the service acts primarily as an intelligent broker, connecting the edges to each other and harnessing the power of the users themselves'. Web 2.0 architecture makes possible dynamic interactions between clients and servers, the customisation of displayed content and 'more direct, interactive and participative user-to-user interaction than heretofore experienced on the web' (Harrison & Barthel, 2009:157). The web has become more accessible, in terms not only the physical availability of technology but more importantly, in terms of usability. Web 2.0 lowered the

barriers for participation by offering easy-to-use tools to access, manipulate, produce and distribute digital content. In that way, the graphical user interfaces of the 'read-write' web (Gillmor, 2004) allow users without technical or programming skills to produce websites and personal blogs, to publish digital content in the form of images, videos, texts and music to various online platforms and in that way to reach a broad audience.

Participatory architecture of digital networked media is often celebrated for its opportunity for learning, creative expression, civic engagement, political empowerment and economic advancement. User-generated-content is perhaps the most significant development enabled by Web 2.0. Digital tools for media production and distribution allow grassroots cultural participation outside of corporate structures. New economic concepts emerge that rely on active contributions from users. Howard Rheingold writes, 'Location-sensing wireless organizers, wireless networks, and community supercomputing collectives all have one thing in common: They enable people to act together in new ways and situations where collective action was not possible before' (Rheingold, 2002:xviii). While proponents of UGC see the democratisation of media production as empowerment that gives liberating power to the people, its opponents criticise the on-going amateurisation of many areas and the exploitation of user agency. The term 'user-generated-content' is usually used in a simplified way to refer to any kind of content that was created by users of online services. However, a more detailed approach is needed to develop an understanding of the process of user-generated content creation and its individual and social implications.

Shao (2009) suggests that there are three ways of dealing with UGC: consumption, participation and production. Consumption refers to passive forms of information absorption: reading, watching and viewing. Participation is described as active interaction with published content: ranking, tagging, commenting and sharing. Production encompasses all forms of content creation. Although UGC seemed to boom over the last years, the majority of users remain passive consumers of media. According to the Social Technographics Report data from 2011, 69% of the EU population are spectators or consumers of online content. Only every fifth online adult is a creator involved in the production of UGC. Nevertheless, there is an increase from the 13% reported in 2007. Although more people are engaging with digital technology every year, the availability of media production opportunities does not make everyone a producer.

Participation in online communities and the creation and publishing of digital content is a complex, relatively new phenomenon that is not easy to research due to its permanent state of change.

From the early nineties, Henry Jenkins started talking about active consumerism and audience participation in media in the process of media production. In 2005, the Pew Internet & American Life project (Lenhart & Madden, November 2005) studied young people's engagement with digital content creation. According to the study results, more than one-half of all teens have created media content, and roughly one-third of teens who use the Internet have shared content they produced. In 2006, the MacArthur Foundation launched a digital media and learning initiative to help determine how digital technologies are changing the way young people learn, play, socialise and participate in civic life. Jenkins describes the participatory culture as 'a culture with relatively low barriers to artistic expression and civic engagement, strong support for creating and sharing one's creations, and some type of informal mentorship whereby what is known by the most experienced is passed along to novices. A participatory culture is also one in which members believe their contributions matter, and feel some degree of social connection with one another' (Jenkins et al. 2006:3).

The strength of participatory culture is in collaboration, active engagement and community. Jenkins et al. (2006:3) outlined four main forms of participatory culture: *Affiliations*, which stands for formal and informal memberships in online communities and social media.

Expressions, which is about producing new creative forms, such as digital sampling, re-mixing, photo- and video-making, writing and other kinds of creative expression.

Collaborative Problem-solving as a unitary term for formal and informal collaborative work in teams to complete tasks and develop new knowledge, such as Wikipedia, Free Software and other communities based on collective effort.

Circulations stand for shaping the flow of media and content distribution, for example blogging or podcasting.

Jenkins's theory of participatory culture is a clear response to liberating the potential of digital technologies. His focus is on the creative use of technology and its positive aspects, dismissing the downsides of mass participation, exploitation of user agency and data for capital accumulation. His notion of participatory culture

encompasses creative self-expression through the means of digital media, content creation, sharing, collaboration and experience exchange. However, his celebration of participatory culture leaves several open questions: who is participating and why?; what are the reasons for not participating?; and what does participation actually mean? He reduces participation to its cultural dimension leaving aside the broader political and social perspective. Participatory architecture of Web 2.0 does rely on user creativity and contribution that creates economic value. More options for self-expression, self-presentation and communication enabled by digital technologies and the Internet are to be paid for with the loss of control over personal data. The potential of digital media to transform an audience into producers may have caused increased participation. However, democratisation of content production and distribution means that not every user is turned into a producer and does not automatically bring liberating power to the people. This is a complex process that stretches over social, political and economic areas of contemporary society.

It has to be admitted that the increased ubiquity of digital networked technologies causes radical transformations through all levels of our society. Due to the complexity of this phenomenon it cannot be approached from a single perspective. In fact, the Internet provides the tools for participation, communication and collaboration. These opportunities can be used by anyone for different purposes. Thus, the Internet can be used for profit-making, for self-presentation, for communication and as a pool of collective knowledge. Both huge corporations and individual users make use of this framework. It is wrong to view the many-faceted nature of the online world as a single phenomenon that is either positive or negative, liberating or exploitative. Instead, each form of cultural participation that grows around individual online spaces requires an individual approach including careful examination of social processes and their cultural implications. In this thesis participation is explored from the bottom-up perspective of user agency: motivation and reasons for participation, kinds of participation and user-generated content, acquisition of learning and experience exchange as well as extended opportunities for personal creativity and self-expression.

From the point of view of cultural participation, Burgess (2007:10) identifies three important structural shifts implied by the Web 2.0 Model and surrounding services and applications. The first is a shift from content production, distribution and consumption to

a convergence of all three. This active mode of engagement with digital content is described by Bruns (2007) as 'produsage' – a hybrid term that involves 'production' and 'consumption' that stands for 'the collaborative and continuous building and extending of existing content in pursuit of further improvement' (Bruns, 2007). Related to this shift, Burgess identifies the second shift from user-generated content to user-led content creation, editing, repurposing and distribution. This trend is characterized through the growing leadership of users whose agency in self-regulated communities of practice shape the 'culture of the network' and its value. Burgess (2007) refers to Wikipedia to illustrate user-led content creation. She defines convergence of user-generated content and social media as the third shift that has 'the most profound implications for cultural participation (...) because this shift opens up new and diverse spaces for individuals to engage with a variety of aesthetic experiences at the same time as their participation contributes to the creation of communities' (Burgess, 2007:10-11). She argues that the significance of Web 2.0 from the cultural studies perspective, 'lies in its potential for a new configuration of the relations between the aesthetic and the social aspects of culture, developed at a grass-roots level' (2007: 11).

User interaction and content creation is one of the important concepts in the new media environment. Grassroots media participation is often celebrated as a revolutionary and democratic way to empowerment. However, physical availability of tools for content production and distribution does not make everyone into a producer. Furthermore, participation is a complex phenomenon that requires categorisation of user engagement. At least, despite the seemingly liberating potential of new media technology, mere participation does not guarantee empowerment. Grassroots media production and participation is a social process that cannot be explored in isolation but rather in relation to the social norms and dominant culture that influence cultural production.

Produsage, Collaborative Action and Open Access

Over time, as online contribution has become easier and more common, and as produsage activities are tightly connected to communicative actions and self-presentation, it has become more relevant to ask not only why individuals

contribute, but also how they organize themselves to collaborate (Aguiton and Cardon 2007).

As Leadbeater and Miller (2004) note, for Pro-Ams, leisure is not passive consumerism but active and participatory; it involves the deployment of publicly-accredited knowledge and skills, often built up over a long career. In 2007 Axel Bruns popularised a term 'produsage' which is a blend of 'production' and usage to describe the blurring boundaries between production and consumption in collaborative communities within a networked environment where consumption necessarily involves conscious or not not-conscious production of user data. Bruns' 'producers' are non-professionals and 'people formerly known as the audience' who took over the role of active media producers.

Bruns evaluates four defining characteristics of produsage (2007):

- 1) Open participation and communal evaluation requires collaboration rather than individual effort.
- 2) Communities are self-regulated whereby the governance in produsage sites is not formalised but functions in the form of 'fluid heterarchies organized through ad hoc meritocracies'. Community leaders and administrators are chosen, often temporarily, according to the quality and amount of their participation.
- 3) Palimpsestic unfinished artefacts in a continuing process stand for the permanent 'beta' version or content that is continuously developed and updated through the community.
- 4) Collaborative content is treated as common property that allows further development and building upon existing content. Contributors receive individual rewards for their work in the form of recognition and status within the community.

Produsage takes place in collaborative self-regulated environments like Wikipedia, Open Source Software, the Blogosphere and others. 'Producers' are active participants with different levels of engagement. Some of them create original content; others interact with published content in the form of comments, ratings and 'likes'. Even the passive online surfers generate metadata that is used by search engines, online shops and other web services for optimisation, advertisement and statistics. A concept similar to Produsage is described by Yochai Benkler (2006) that he calls 'commons-based peer-production'.

Bruns' concept of produsage can be applied to many user-led collaborative spaces that offer participatory opportunities and connect members of a community who are miles away from each other but are driven by the same interest in a particular area. Such communities help to bridge social, economic and political boundaries and connect people from different backgrounds, nationalities and geographical locations through the focus on their motivation to participate and contribute to the common good.

The participatory collaborative environment of the World Wide Web initiated deep social and cultural transformations. These are essentially visible in self-aggregation around shared interests and common value creation. New media optimists like Leadbeater and Miller, Bruns, Benkler and Jenkins are positive about the role of amateurs in media production. More sceptical accounts see user agency as highly profitable business for media companies (Van Dijck, 2009). Keen (2007) sees professional quality standards at risk of amateur intervention. He is concerned about blurring the distinction between qualified and informed professional and unqualified amateur content available on the Internet. Keen is concerned about the negative impact of the 'cult of the amateur' upon culture, in particular on the Internet. Both optimistic and pessimistic writings on user agency operate on the common ground of changing relationships between the amateur and professional and the public and private.

Web 2.0 offers a variety of participatory platforms and services and therefore, it is almost impossible to make generalisations across different contexts. Some user-led communities like Wikipedia or Free and Open Source (FOSS) are aimed at knowledge generation and the creation of common value. Other proprietary services like Facebook or Google provide tools for communication and social networking and making profit from users' personal data and targeted advertising. Accordingly, there are different aims and motivation for the use of these services. The aims for using social networks are rather practical. The services provide easy-to-use tools for networking and content sharing that are used by millions of people across the globe. In contrast, a minority actively contribute to Wikipedia, FOSS or other merely ideological projects of the A2K movement, which is an 'umbrella term for a movement that aims to create more equitable public access to the products of human culture and learning'. Fields of advocacy that it subsumes include, most centrally, copyright and patent law reform, open access, open data and open standards, but also access to public information and

broader communication rights such as freedom of expression, as well as issues around ownership of and participation in public media (Noronha & Malcolm, 2010:2).

Consumers International (CI)⁶, the world federation of consumer groups that serves as an independent and authoritative global campaigning voice for consumers, with over 220 organisations in 115 countries, is building an international movement with the goal of consumer protection. CI's global programme on A2K was established in 2008 'to guarantee that consumer interests are adequately represented in national and global debates around intellectual property and communication rights' (Noronha & Malcolm, 2010).

CI believes that in the digital age access to knowledge is a common consumer issue on a par with the more traditional such as food and product safety. This argument is based on the increased digitalisation of everyday life where a lot of mundane activities such as accessing learning materials, transferring data between devices and content publishing are deeply impacted by intellectual property laws and policies (Noronha & Malcolm, 2010).

The Access to Knowledge campaign emerged from a network of formerly dispersed social movements with different backgrounds but that follow the same belief that knowledge must be public property, free, open and accessible for everybody. Free software and open source communities, the free culture movement and open access publishing are some examples of social networks that defend the concept of 'openness' and 'collaboration'.

With the introduction of open licences, such as the GNU General Public License, as an ideological concept, the community of free software and open source developers began to grow from being mostly technically engaged to being politically mobilised (Benkler, 2010). The underlying concept of free access began to spread into other areas of social life that initiated a culture of 'commons' that is based on the shared values of a community of similar-minded individuals. Fundamental to the Open Access value system is the belief that knowledge should be in the public domain. This culture is based on a gift economy and its power is in the 'crowdsourcing'. The main idea is that a product or

⁶ Consumers International (CI) - the world federation of consumer groups founded in 1960 - serves as the only independent and authoritative global campaigning voice for consumers.
<http://consumersinternational.org>

artefact can only benefit if set free, because of the collaborative contribution to its improvement. The motivation is not philosophical, but more like beneficial selfishness. Instead of re-inventing a bicycle, it is more efficient to browse the Internet for available open source resources and customise them according to one's needs. As the Nobel laureate and computer-oriented social scientist Herbert A. Simon (1996) explained, 'the meaning of 'knowing' today has shifted from being able to remember and repeat information to being able to find and use it'.

The ideals of open access and freedom have been taken up by various groups of people across the globe. Thus, inspired by Lawrence Lessig's ideas and his book 'Free Culture' (2004), an international student organisation - freeculture.org - was founded. The free culture movement promotes the 'permission culture' – the freedom to distribute and modify creative works, using the Internet as well as other media. freeculture.org collaborates with other non-governmental organisations which have similar goals, like Creative Commons, the Electronic Frontier Foundation and Public Knowledge and is known for the enormous activism of its members.

Free culture promotes the following goals:

- Decentralisation of creativity - getting ordinary people and communities involved with art, science, journalism and other creative industries, especially through new technologies.
- Reforming copyright, patent and trademark law in the public interest, ensuring that new creators are not stifled by old creators.
- Making important information available to the public.
(freeculture.org)

Open access and unrestricted exchange of information have also been taken up by the scientific community. The costs of access to academic journals and articles are rising, which helps the journal-publishing industry to flourish but hinders academic research that requires access to already published work. In order to change the situation, scientists began to adopt the open access model introducing open scientific journals that merely rely on volunteers. Today, over 13,000 free, peer-reviewed, electronic journals are listed in the open science directory (opensciencedirectory.net). This database of freely accessible scientific literature is especially important for research

in developing countries that lack the means to purchase memberships for electronic databases or commercial journals. The number of open, academic, electronic libraries is growing e.g. the Public Library of Science (www.plos.org) and ArXiv.org and Ansinetnetwork (www.ansinet.com) among others. These enable free access to scientific knowledge which is an important pre-condition for innovation and progress.

The idea of open access is being transferred to other areas of modern society. It has been increasingly adopted in education and learning. Diverse projects, for instance MIT's OpenCourseWare, the Open Learning Initiative and the Center for Open Sustainable Learning that provide free educational resources online began to discover each other and shape a formation that is known as "Open Educational Resources" – or OER (Bollier, 2008), that share the idea 'that the world's knowledge is a public good and that technology in general and the World Wide Web in particular provide an extraordinary opportunity for everyone to share, use and reuse knowledge' (Atkins et al., 2007). OER consists of 'teaching, learning and research resources that reside in the public domain or have been released under an intellectual property licence that permits their free use or re-purposing by others' (Atkins et al., 2007:4).

A number of websites promote OER e.g. the OER Consortium or the OER Commons that offers open textbooks, classroom management, professional development and other educational resources for free. The materials can be used by educational institutions and individuals for self- and distance-learning. The resources are especially valuable for those not able to afford learning materials and courses. The open access is an important motivational factor in promoting self-development and learning among the population. Offered online, they enable interaction with the users which helps to develop materials that target the needs of the learners. The OER movement is growing through the contribution and support of institutions and individuals who have the pleasure of contributing to the public good (Bollier, 2008).

A unifying concept for the different projects and initiatives that build the A2K movement is 'openness': for instance open access, open standards, open content and open educational resources. This wide range of open resources is known under the unifying concept of 'open knowledge' according to which definition 'a piece of content or data is open if you are free to use, reuse, and redistribute it - subject only, at most, to the

requirement to attribute and share-alike' (opendefinition.org). The term knowledge is taken to include:

1. Content such as music, films and books.
2. Data, be it scientific, historical, geographic or otherwise.
3. Government and other administrative information.

If the content, data or information is distributed as open knowledge it usually utilises one of the existing open licences such as the Creative Commons, GNU Free Documentation, Free Art or Open Data Commons⁷.

There is an even broader palette of licences available for software, which covers different approaches for development and distribution⁸. Some of the licences have been developed for specific projects as for example the Apache License or the Mozilla Public License.

This openness, transparency and access to knowledge is essential in democratic societies. The digital technologies and the global network allow the easy publishing and distribution of data. Free access to knowledge enables collaboration, creativity, learning, development and social well-being.

User-generated-content as a form of amateur media production

Amateur media production has a long history. However, today, with the increased integration of digital information and communication technologies (ICT) into our daily lives, means for media production are available to more people than ever before. Through the growing ubiquity of networked digital technology and the simplicity of tools, a growing number of people use ICT to produce digital content. Bottom-up media production has become part of social participation that encompasses communication, identity, social ties and community belonging. As Mimi Ito (2010) states, 'amateur media is one of the most important sites of social, cultural, and technical innovation in today's networked media environment'.

⁷ <http://www.opendefinition.org/licenses/>

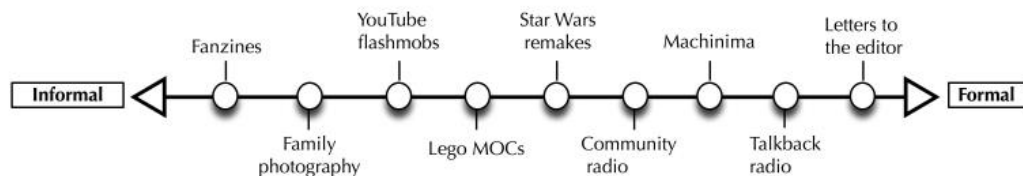
⁸ <http://www.opensource.org/licenses/category>

Amateur media is usually defined as opposite to professionally-produced mass media.

The participatory turn in Web technology brought into existence a new term – User-Generated-Content (UGC) - that relates specifically to audience-produced digital media. The increasing ubiquity of user production in the digital media landscape has been investigated by many scholars. Hunter (2012:3) notice that ‘contemporary UGC is often imagined as a disruptive, creative force, something spontaneously emerging from the creativity of individual users newly enabled as expressive agents by digital technologies’. UGC is defined as part of informal media systems that ‘fall largely or wholly outside the purview of state policy, regulation, taxation and measurement’ (Hunter, 2012:4). Their informal media economy encompasses the whole range of Do-It-Yourself production including any type of user agency (content production, file-sharing, Fanfiction⁹) within the informal sector. The field of UGC does not exist on its own. It interacts and relies on industrial and institutional media companies and governmental forces. In the industrial age the informal media economy has already been recognised as ‘a fundamental politico economic process at the core of many societies’ (Castells and Portes, 1989: 15). It should not be marginalised but ‘brought into the mainstream of media and communications research as objects for comparative analysis’ Hunter (2012:6).

According to Hunter (2012), UGC occupies the whole spectrum between the poles of informal and formal media forms.

Figure 1: UGC across the spectrum of formality



⁹ Fanfiction is a unitary term for fan-produced derivative works based on popular copyrighted media. These works are usually published online.

Examples of user participation in fully-controlled, formalised, media environments are professionally-edited letters to the editor of a newspaper or a magazine or community radio. On the informal end of the spectrum operate bottom-up self-regulated forms of user agency such as blogs, wikis, amateur photography and video footages published on the web. Hunter et al. (2012) points out that amateur as well as professionally-produced mass media move between formal and informal poles over time. For instance, mass media increasingly publish user-generated content. Copyright and licences associated with published content add a layer of formality to amateur media. If the early web was merely informal as the issue of copyright was not set in focus, today, most of the UGC is copyrighted or published under open licences. To illustrate the fluidity of UGC in relation to formality, Hunter et al. (2011) describes how family photography has been changing over time:

What was once an expensive, occasional, studio photograph — a transaction towards the formal end of our spectrum — has become a casual, inexpensive, and everyday activity, more so than ever with the extraordinary global popularity of the camera phone (Hunter *et al.* 2011:8).

Since the birth of snapshot photography initiated by Kodak in 1888, integration of a camera with video capability into mobile phones is a further step that brings image-capturing technology to the masses. In November 2013 for the first time, smartphones made more than half of all new mobile phone handsets (Gartner.com¹⁰). If hitherto a photo camera was usually taken on special occasions, smartphones accompany their users all the time. This allows the user to capture media immediately and to share it with other people or on social networks. It has become a norm to see video footages and photographic images made by witnesses in breaking news. No media organisation can send a camera team quickly enough to the place where an unexpected event is happening. So along with family photography, the growing ubiquity of media in the hands of the general public capturing and publishing technology facilitates amateur media production and distribution as a part of social practice.

¹⁰ (<http://www.gartner.com/newsroom/id/2623415>)

Since the emergence of social networks in 2005, the previously dispersed UGC have become more organised and centralised as more people publish their content on social networks rather than in personal blogs or websites for a variety of reasons. Firstly, social networks like Facebook offer user-friendly sets of tools for communication and media sharing. A piece of content can be published within seconds with no need for conversion or further adjustments to fit the web standards. Intuitive user interfaces require no special skills and knowledge. These processes are automated and hidden from the end-user. Secondly, it is convenient to use such extremely popular giants like Facebook as a majority of one's friends are likely to be already using them, so there is no need for a special invitation to join the community. The simplicity of the publishing process, the opportunities to reach easily a wide audience, to participate in and to build one's own online communities of practice are among the most important reasons for the burgeoning popularity of social media networks.

In many studies, audience labour is described as a radically new phenomenon enabled by the participatory infrastructure of Web 2.0. To distinguish an active audience where the user plays an active role in generating and customising digital content, different composite terms have been proposed, e.g. Bruns calls it 'produsage' (production and usage), Denison (2011) comes up with 'prosumers' (producers and consumers) and Ruckenstein (2011) with 'prosumption' (production and consumption). Although the term User-Generated-Content has become popular with the emergence of Web 2.0, the practices of bottom-up production are neither historically new nor are they brought into existence by the development of information technology. Although digital information and communication technology with its easy-to-use tools lowered the barriers to amateur media participation, the phenomenon itself is not revolutionary. Media forms and means of production are changing over time; nevertheless, there were always bottom-up efforts of mass media participation or developing an individual's own media channels.

The *Journal des sçavans* founded in 1665 is an early example of audience-produced content. Published scientific articles took the form of letters described scientific experiments and discoveries, announced new inventions and other curious facts. The innovative concept of the journal offered an opportunity for scholars and interested amateurs to establish contact with other readers. Submitted articles were edited for style

but not for content. So, editors took no responsibility for published materials and the views expressed (Brown 1972:368-369). The Journal des sçavans and the Philosophical Transactions of the Royal Society Journal founded slightly later was an evolutionary step that organised previously dispersed communication among the scientific community and made it available to the wider audience. The new medium provided new opportunities to existing practices and made it possible to claim a discovery, to seek help from a community and to obtain information. The journal did not invent new behaviours but contributed to a better-organised scientific community and opened new ways of communication and collaboration.

There are other examples of audience-produced content in the mass media prior to the Internet era: letters to the editor of mainstream newspapers, reader contributions to popular magazines, reality television, radio phone-in shows, amateur photographs and video footages submitted to the news agencies. However, these forms of audience participation were rare and only a small group of people felt confident enough to participate.

Usually, the audience members communicated with the mass media independently from each other. Their content was usually framed by media professionals who edited the letters or compered radio or TV shows. As media companies did not invite a two-way communication, the majority of the audience remained passive consumers of the information offered.

Today, there is a diversity of channels that enables the audience to access the media, to respond to the media, to communicate with other members of the audience and produce and publish their own media content. Previously, a letter to an editor would take weeks to be published. Through the ubiquity and immediacy of digital technology, breaking news, pictures or video footage can be transmitted to a news agency or posted online within seconds. A great amount of citizen journalism¹¹ takes place outside of

¹¹ **Citizen Journalism**

Citizen Journalism is based on the idea that people without professional journalism training can engage in the process of gathering, reviewing, reporting, analysing and distributing news and information. Citizen journalism stands outside the regulated or politically attached news organisations. This phenomenon has gained a mass dimension through the development of the Internet and online media. According to new-media theorist Terry Flew, three elements contributed to the rise of citizen journalism and citizen media:

traditional media in online communities and forums. Media corporations recognized this source of valuable information and reacted in setting up online spaces for user-generated content. The New York bombing attack in September 2001 made clear the value and the potential of amateur media. For instance, as stated by R. Sambrook, the director of the BBC's Global News division, the initial official reports about the bombings were challenged by an e-mail sent by a viewer (Wardle & Williams, 2008). After the 9/11 attacks, the BBC launched digital storytelling projects aimed to train people 'to shoot and edit their own multimedia packages for broadcast over a range of BBC output' (Wardle & Williams, 2008). The BBC runs a number of projects that invite a collaborative form of journalism. One of them is an online hub for user-generated content launched in early 2005 to collect photographs, stories and video footages from the audience.

Before 7/7 BBC News interactive in London got around 300 e-mails on an average day. This has now risen to around 12,000, with spikes around certain popular stories. (...) From a very low base around 3 years ago, they now get around 1000 stills and video clips sent in on a quiet week, and during the floods in June 2006 they received around 7000 photos and videos in five days (Wardle & Williams, 2008).

The BBC values the immediacy of user-generated content submitted by eyewitnesses seconds after an event has happened. To ensure a better collaboration between professional and amateur journalists, the BBC College of Journalism runs a training programme for young journalists called 'Have they got news for us' aimed at editing and handling UGC.

The BBC's UGC hub relied on audience content sent to a central e-mail address. At that time social media websites were in the early development stage. Facebook had 5 million users compared to one billion today. According to a research project on UGC on BBC, only a small group of people submitted audience content: 23% of the British public has sent in material to a news organisation. The majority of the audience members

open publishing, collaborative editing and distributed content. Blogging is the most conventional method of modern citizen journalism.

surveyed did not see their content as valuable enough to be submitted to a news organisation. However, they share it with their friends and family within the social networks (Wardle & Williams, 2008). Therefore, more recently Claire Wardle, digital media consultant, trained BBC staff to use social media as a source of interesting stories shared by people. According to her, news agencies move their focus to social media as people share their content more freely with friends and acquaintances.

Forms of User-Generated Content

With the emergence of social media and other forms of participatory web, the umbrella term User-Generated-Content or Consumer-Generated-Content is often used to refer to various forms of bottom-up media production. Due to the fact that there is no unitary definition of the term, every researcher concerned with UGC attempts to outline the phenomenon.

In 2007, the Organisation for Economic Cooperation and Development (OECD) proposed three main characteristics of UGC: it is published online and made available to other users; its content is considered as UGC when a certain amount of creative effort is put into it; UGC 'often does not have an institutional or commercial market context and UGC may be produced by non-professionals without expectation of remuneration or profit' (Vickery & Wunsch-Vincent, OECD 2007).

The OECD report was published in the early years of social networks. Although it is still partly relevant, there are several amendments to the criteria cited above. First, OECD links UGC to the Internet as the only publication medium and in that way limits the range of UGC. It is argued that non-publicly accessible forms of communication such as e-mails and instant messaging do not fulfil publication requirements for UGC. In this research, online publishing is seen as important but not compulsory for UGC. With the growing ubiquity of mobile technology alternative channels of communication that do not rely on the World Wide Web technology emerge. Daugherty et al. (2008:36) propose that 'UGC could be understood in a broader sense as multimedia-driven including emerging mobile devices and converging media'. Wunsch-Vincent and Vickery

(2007:18) believe that mobile devices, peer-to-peer video technology (IPTV) and game consoles will provide an additional impetus for UGC in the future. On the basis of recent developments in mobile and other technology, 'shared' is a more suitable term for UGC than 'published'. In this case, it is not compulsory to publish online since content may be shared with other users through alternative digital communication channels.

The second property of UGC suggested by the OECD is creative effort. Users produce a great amount of content, ranging from copy-and-paste material, re-posts or snapshots to highly creative works. Therefore, it is not easy to establish the amount of creativity applied to the production of UGC. Although OECD authors exclude copying and pasting of third-party-produced content from UGC they recognise re-mixed works as users' creative labour. Due to the fluidity of digital data, it is not easy to establish how much individual or collaborative effort is behind each piece of UGC. Although all audience-produced data involves a certain degree of personal involvement, the amount of creativity applied to it differs. Creativity and authorship are two contested fields that directly relate to UGC but that are hard to define due to the fluidity of digital data.

The last characteristic of UGC proposed by the OECD is its voluntary and non-commercial nature. The authors recognised that although the early UGC 'may have begun as a grassroots movement not focused on monetary rewards, [the] monetisation of UGC has been a growing trend' (Vickery & Wunsch-Vincent, OECD 2007:18). Today, the most popular platforms for UGC (Facebook, YouTube, and Flickr.) are proprietary. UGC has become a highly profitable business model that utilises user data for targeted advertising and marketing purposes. There are many examples of successful collaboration between amateurs and professionals, as for example, Open Source software. In this case the boundaries between committed amateurs and professionals are blurred. Everyone who has the skills can participate in the movement and produce their own pieces of code or software versions that can be sold or distributed for free. Consequently, UGC is not always produced by amateurs nor is it compulsorily non-commercial. Nevertheless, UGC is created and published on a voluntary basis for a variety of different motivations.

The extensive nature of UGC allows it to be classified in different ways dependent on criteria of interest. Some examples would include classification of practices related to UGC, types of UGC, people who produce UGC, tools and platforms for UGC.

Haythornthwaite (2009), for instance, sees micro-participation from unconnected users as opposed to a virtual community model based on strong connections and peer-support. Similarly, McKenzie et al. (2012) distinguish merely between small-scale (the first two models) and large-scale collaborative forms of content production classifying individual software development that builds on existing platforms as a separate category. They proposed three models of content creation and distribution: creative content (individual multimedia content distributed online through social media and other platforms); small-scale tools (software applications and modifications written by individuals to operate within existing datasets, operating systems and hardware) and collaborative content (produced by formal or informal communities of practice). Both studies classify UGC merely according to user involvement into the process of creation (individual or collaborative) as it is a crucial criterion of bottom-up media practices.

Nevertheless, some classification points that address the form and nature of user-produced content published online can be added. The following four categories distinguish between the type of UGC, the extent of user involvement in the process of production and distribution as well as the personification and authorship of produced content:

- A user's self-produced content – blogs, wikis, photography, video, texts, citizen journalism and podcasting;
- User comment – opinion and discussion about existing content posted by other amateurs or professionals;
- Collaborative content – content created in collaboration with others, open source software, Wikipedia articles, collaborative scientific or media projects where amateurs and professionals collaborate;
- Re-mixed content – content that builds on existing data that is re-combined and changed to create 'new forms, ideas, mashups and services'¹² (open source software, Fanfiction, derivative art, music re-mixes and covers).

User-Generated-Content is a general term that is applied to any form of audience participation. Therefore, more clarity is needed when talking about specific types of user-produced material. The suggested categories of UGC encompass the main forms of

¹² 'Approaching a definition of Web 2.0' – The Social Software Blog <socialsoftware.weblogsinc.com> accessed Nov. 2006

user labour in the online environment. They do not exist in isolation. Generally, the most common user activities on the web - like participation in online communities; communication and collaboration with other users - include production of various types of digital content. For instance, someone uploads a photographic image on Facebook. Other users comment on this photograph, the author usually responds to the comments. User-produced content and user comment are the most popular forms of user labour that fill the participative web: Social networks, online communities of practice, commercial websites that invite audience participation, Wikis, Blogs, Microblogs, Forums and question-answer databases and other examples of Web 2.0.

Collaboration and re-mix are further popular forms of User-Generated-Content. Open source software is a good example of such practices. The source code produced under General Public License can be downloaded and modified. It has become a general practice in Open Source Software to build on existing pieces of code to fix bugs or to produce a better version of an existing application. Collaborative open source projects are also very common. One of the most successful among them is Linux – a free operating system released under a GNU-General Public License that allows modification and re-distribution under the same license. In that way, anyone is free to create their own distribution for any intended use. Collaboration and re-mix are also popular in music production. Especially in electronic music communities, users often work together on a piece of music, adding instruments and beats, re-mixing and modifying existing loops into new forms of musical experience. There is a range of other areas that utilize mash-up and collaboration, as for instance, derivative art, Fanfiction, spoof videos on YouTube and user-created pseudo-movie trailers.

As UGC is not a focus of this thesis, further elaboration on each type of user-produced media will not be pursued. A detailed description of different forms of UGC can be found in the OECD report (Vickery & Wunsch-Vincent, 2007:31-41).

Drivers of UGC

In order to understand the tremendous popularity of bottom-up production it is important to look at the behaviours and motivations of both producers and consumers of UGC. UGC is a young field of study and there is limited knowledge on user involvement with it.

Shao (2009) suggests that there are three ways of dealing with UGC: consumption, participation and production. Consumption refers to passive forms of information absorption: reading, watching and viewing. Participation is described as active interaction with published content: ranking, tagging, commenting and sharing. Production encompasses all forms of content creation. Although UGC has seemed to boom recently, the majority of users remain passive consumers of media. According to the Social Technographics Report data from 2011, 69% of the EU population are spectators or consumers of online content. Only every fifth online adult is a creator involved in the production of UGC. Nevertheless, this is an increase from the 13% reported in 2007. Although more people are engaging with digital technology every year, the availability of media production opportunities does not make everyone a producer. Participation in online communities, the creation and publishing of digital content, is a complex, relatively new, phenomenon that is not easy to research due to its permanent state of change.

A number of drivers for UGC appear in academic literature. According to Christodoulides et al. (2010), co-creation, empowerment, community and self-concept have a positive impact on UGC involvement. Burmann and Arnhold (2008) claim that UGC is facilitated through the desire to collaborate, obtaining information about other consumers, interaction and creativity. Psychological motivations to produce UGC are described by Krishnamurthy and Dou (2008): self-expression, social connection, knowledge-sharing and advocacy. For Proulx et al. (2011), there are ideological reasons for contributing by those who believe in the value of sharing, the obligation to contribute in return for what one has received, recognition of accomplished work (especially relevant in the Free and Open Source (FLOSS) movement) and feeling accomplishment and pleasure of participating (p. 12). They argue, as most of contributors do not expect anything in return, it is important to examine how 'the value of an individual subject is established and confirmed by others through practices of recognition and reputation among other users (p. 13). As they regard communicative action and self-presentation tightly connected to produsage activities, Proulx et al. (2011) stress the importance of examining not only motivations for contributing but also the social and communal environments where these contributions take place.

In the OECD report, Vickery & Wunsch-Vincent (2007:28) recognise four drivers of user-created content: technological, social, economic, institutional and legal. Below, these four drivers are developed using the impacts on UGC of more recent technological developments.

Technological drivers

Broadband Internet connections, the availability of affordable computer and mobile technology, increases in processing speeds, more accessible software tools that allow content creation, modification and distribution without professional knowledge, online services for UGC – all these factors build a technological context for bottom-up media production (Vickery & Wunsch-Vincent, 2007:28). Successful participation is enabled through a set of tools and skills that allow access, manipulation and production of digital content. The early web was produced by IT professionals and was merely read-only for ordinary users. On the contrary, Web 2.0 offers easy-to-use tools that do not require advanced technical skills to produce content. The user-friendliness and intuitive interfaces of social media and other communication platforms are important drivers of increasing participation and production of digital content by ordinary users.

Social drivers.

Self-expression, community-building, sharing, interaction between users and collaboration are among the major social drivers specified by the OECD report (2007), Burmann and Arnhold (2008) and Christodoulides (2010). The increased availability and use of online services are crucial in shaping new media consumption behaviours especially among the younger population (Vickery & Wunsch-Vincent, 2007:29). “Digital natives” – ‘a group of young, digitally skilled users who grew up using the internet and Web 2.0 platforms’ (Christodoulides et al., 2010) is often described as the leading community in UGC production (Burmann and Arnhold, 2008).

Social norms and communication patterns obviously play an important role in consumers’ media choice for information exchange. For example, in the UK most public organisations communicate via e-mail and telephone calls. In Germany printed letters or fax are still the only accepted media for bureaucratic correspondence. Friends, co-workers and relatives that use a specific social network or a software application also

affect personal choices of a communication medium. For instance, a member of an offline sport club creates a community group on Facebook. In this case, Facebook serves as a set of tools for creating a simple online presence. It is necessary to create a Facebook account in order to establish contact with other members of the group. Another example is XING.com known as a network for professional contacts. Freelancers and job seekers gain their chances for a good job or position if they have their profile on Xing.com. Social media and other online communities are often used to reach a specific audience or maintain contact with a circle of friends, relatives, co-workers or online communities. In that way, the need for participation emerges from and is shaped by communication norms common in an individual's social surroundings.

Economic drivers

Since the development of the participatory infrastructure of Web 2.0, the potential of active consumerism and bottom-up content production has been recognized as a valuable opportunity for business and directed advertising. Internet users share a lot of information voluntarily or otherwise. Almost every webpage collects metadata encompassing IP address (providing geographical location and broadband provider), anonymous usage data, address of the previous website, browser type, operating system, screen resolution and much more. This technical data is collected automatically to improve the performance of the service. Nevertheless, a possible use of this information is anonymous statistics and niche marketing. For instance, it has become common to see local advertisements linked to one's geographical location when visiting international websites. This is possible through tracking a user's IP address. As VanDijck (2009:49) writes, 'metadata are not merely a by-product of user-generated content: they are a prime resource for profiling real people with real interests'. Coupling user online activity with his or her metadata is a highly profitable business that 'remains highly invisible and often unaccounted for' (VanDijck, 2009:49).

Most proprietary social media platforms require registration in order to post comments and upload content. A user is usually asked for his or her name, e-mail, and sometimes more personal information like gender, date of birth and postal address. Subsequently, one has to agree to complicated terms of user agreement often granting copyright for uploaded content to the website owners (e.g. in case of Facebook and

YouTube). These services are known for tracking the personal and social behaviours of their users. It is stated clearly in YouTube's Terms of Use:

We may record information about your usage, such as when you use YouTube, the channels, groups, and favorites you subscribe to, the contacts you communicate with, and the frequency and size of data transfers, as well as information you display or click on in YouTube (including UI elements, settings, and other information). If you are logged in, we may associate that information with your account. We may use clear GIFs (a.k.a. 'Web Beacons') in HTML-based emails sent to our users to track which emails are opened by recipients (<http://youtube.com/t/terms>, accessed 3.11. 2009).

Granting access to all personal information and rights over UGC is the price users pay to be able to use popular social media platforms.

Apart from unknowingly submitted information, many users share their personal data voluntarily. It has become common for social media users to update their status regularly, to post their location, interests, thoughts, pictures, videos and other personal information on their profile pages in Facebook, twitter or other UGC platforms. Only a few users find their way through the privacy settings to restrict access to their shared content to a certain group of people. According to an Infographic posted by SeomWorld.com in 2013, 63% of Facebook profiles are public. In other words, anyone in the world can access their personal data including photos and videos, activities and friends. Many of those users are unaware that their data is used for online marketing, targeted advertising, statistics and other purposes not to mention online stalking¹³ and criminal activity. Media companies facilitate user participation providing opportunities for UGC and social interaction in exchange for users' data and privacy.

Institutional and legal drivers

¹³ <http://ansonalex.com/infographics/facebook-stalking-statistics-2012-infographic/>
Accessed January 2014

The emergence of alternatives to Copyright licences that enable legal creation, modification and distribution of digital data is listed in the OECD report as one of the four main drivers for UGC (Vickery & Wunsch-Vincent, 2007:30). Flexible licence schemes, e.g. Creative Commons, allow creators of UGC to decide about the use of their content. A General Public License allows software code to be used, modified and distributed. These 'open' licences allow building on the work of others and in this way facilitate collaborative creativity.

Moving the focus from User-Generated-Content to its producers, it is important to note that no average UGC user exists. A qualitative analysis of nine websites for UGC conducted by Ohoa and Duval in 2008 confirmed the rule-of-thumb known as 'participation inequality' that suggests that 90% of the content is generated by 10% of contributors (Ohoa and Duval, 2008:6). According to the study, this proportion changes from one website to another, however, the trend remains that a small group of active users produce most of the content. There are some users that publish occasionally and many that visit websites, online groups and communities and consume the content without contributing. These passive users are often called 'lurkers'. Lurkers are often criticised for their selfishness and non-contribution. However, research has found that this behaviour is often a result of the lack of experience with the online communities and the tools of production. Nonnecke, Preece and Andrews (2004) conducted an online survey with 1188 participants of online communities almost 20% of whom were 'lurkers'. As main reasons for non-participation of 'lurkers' they evaluated: 'not needing to post; needing to find out more about the group before participating; thinking that they were being helpful by not posting; not being able to make the software work (i.e. poor usability); and not liking the group dynamics or the community was a poor fit for them' (p. 201). Other factors that hinder the use of production and participation opportunities of Web 2.0 are 'lack of time, lack of skills to investigate, experiment and evaluate alternatives' (Procter et. al., 2010:4052).

As cited earlier in this chapter, the participation rate is increasing and more passive with less non-users and passive users of online technologies each year. As Lampe et al. (2011) write, lurkers are potential active users in the future. They learn from other users how to behave and contribute online. Williams et al. (2005) see discovery, experimentation and learning by doing as important parts of technology 'domestication' –

making new technology a part of everyday routines. The process of domestication includes 'construction and reconstruction of culture as old and new combinations of artefacts, skills, knowledge and social relation'. (Williams et al, 2005:57). The end user plays an active role in the process of integration of new technology. Through users' exploration, attribution of meaning and integration into everyday social settings, acceptance, rejection or further development of technology is determined. Numerous tools available today makes it difficult for an average user to decide which one to choose to perform specific tasks like photo- and video- editing, blogging, messaging and others. A further problematic aspect for an uninformed user is to find out whether a tool is free or requires payment. As Procter et al. (2010:4053) found out in their study on the use of Web 2.0 technologies in scholarly research, 'lack of formal skills may be less of a barrier to adoption than knowing what services and tools are available and an awareness of models of how they may be applied productively' for specific needs. Taking that into account, passive users and participants of online communities of practice are gaining their knowledge and skills, learning from other users and discovering new capabilities of digital tools and services. This knowledge helps them to frame their personal needs and to explore the tools further through more active and more conscious participation. Procter et al. (2010) emphasize the importance of more organised exchanges of knowledge and experience as well local support that may help to overcome the unevenness of Web 2.0 adoption. As Hunter et al. (2011) argue, 'the dynamic at work here is one of making small-scale cultural production more visible, more regulated, more commercial, and more institutional'.

Technology adoption is a long-term process that proceeds at various speeds across different parts of the population. Williams et al. (2005) see this process as 'social learning'. They build on the original definition proposed by Sørensen (1996) 'Social learning is the combined act of discovery and analysis, of understanding and giving meaning, and of tinkering and the development of routines'. According to Williams et al. (2005), social learning is not limited to the 'learning economy' of supplier-user interactions, but extends into the efforts of various players associated with ICT' (p. 50). According to Williams et al., social learning includes 'domestication' of technology - creation of meaning and practical efforts to make technology work. Through domestication, an artefact becomes 'invisible' – incorporated into daily life. Either

through learning-by-doing, formal training or learning from others, people develop routines and practices that enable them to perform necessary tasks according to their needs. Williams et al. (2005) see the emergence, adoption and use of new technologies as a long-term process of discovery, experimentation and negotiation between technology developers and users. It is a two-way communication: users explore and use new technological capabilities and try to adapt them to their needs and purposes whilst developers try to understand and identify users' needs in order to optimize the software and its usability.

Social Media

Web companies that 'embraced the power of the web to harness collective intelligence' (O'Reilly, 2005) experience bursts of popularity. They offer services that enable users with little technical expertise to construct and share digital content, to participate in online communities and create personal networks. These services are known under the encompassing term 'social media'.

In 2004, Trendwatching reported on the modern phenomenon of 'Generation C' where 'the C stands for CONTENT, and anyone with even a tiny amount of creative talent can be a part of this not-so-exclusive trend'. Generation C fills the Internet with a mass of content, where the quality ranges from absolute amateur to almost professional level. Trendwatching distinguishes two main drivers of this trend:

- 1) The creative urges each consumer undeniably possesses. We're all artists, but until now, we neither had the guts nor the means to go all out.

- 2) The manufacturers of content-creating tools, who relentlessly push us to unleash that creativity, using -- of course -- their ever cheaper, ever more powerful gadgets and gizmos. Instead of asking consumers to watch, to listen, to play, to passively consume, the race is on to get them to create, to produce, and to participate (trendwatching.com, 2004).

One year later, Andres Blau published a report on a yearlong study of independent media and their future in the digital era (Blau, 2005) in which researchers recognised the

inevitable changes to the media fabric initiated by new technologies. Blau sees the Internet as the 'next important platform for media of all kinds' which will be home to the new generation of media makers and viewers, the 'thing that connects most of their media choices' (Blau, 2005:4). He argues that new patterns of 'grassroots' media participation will bring radical social and cultural transformations with it:

The media landscape will be reshaped by the bottom-up energy of media created by amateurs and hobbyists as a matter of course. The resulting output will overrun the institutions and strategies created to organize and navigate an era of great scarcity of media equipment and products. Images, ideas, news, and points of view will come from everywhere and travel along countless new routes to an ever-growing number of places where [they] can be viewed. This bottom-up energy will radiate enormous energy and creativity, but it will also tear apart some of the categories that organize the lives and work of media makers (Blau, 2005:3).

Blau describes a new, emerging, generation of media makers who feel comfortable in the world of new media. They are 'tech-savvy, swimming in connectivity and mobility, blurring the boundaries between producing and consuming media, gaming, and all the while multitasking' (Blau, 2005:6).

The recent findings of a Pew Internet and American Life Project study on Social Media and Internet use among teens and young adults (Lenhart et al., February 2010) confirmed the trends described in Blau's report of five years earlier. The study findings show that today the Internet plays a dominating role in lives of many people, particularly the younger population. Ninety-three percent of teens aged 12 to 17 are often or permanently online, compared to 74% of all adults. Social networking is up to 73% of 'wired' teens, or those who use the Internet often, compared to the 55% of teens who used the sites just three years previously.

Social networking portals like Facebook and MySpace, which are the most popular today, also described as 'social media' have become modern networks of user interaction, exchange and media production. They offer the means for immediate communication with a personal network of online contacts. Members update their status,

exchange views, post their photographs, videos, music and texts, comment on other's work and play games collectively. These vivid communities can easily become addictive as each member's personal 'wall' is permanently filled and updated by his or her friends' content. Among modern youngsters, it has become common to report online on personal actions, moods, thoughts and locations. Teens use various media to stay in touch with the community. In response to this growing need for a constant online presence, some mobile phone providers already enable permanent social media connectivity that does not require expensive mobile Internet tariffs. This enables instant participation within social media and other networks while 'on the go'.

A successful model of the most popular social media portal is Facebook. Launched in 2004 as a network to connect Harvard students, Facebook became a highly profitable company in ten years with a market value over 170 billion US dollars in 2014 (mashable.com). A huge community of 1.2 billion active users (<http://www.statista.com>) shares about 70 billion pieces of content each month. Facebook attracts its users by an intuitive interface and easy-to-use tools for communication, uploading and sharing content.

YouTube is another highly popular online participatory platform that enables its users to upload video content and make it available online. The extraordinary success of YouTube is in its simple interface which does not require any particular skills for successful video sharing. In the days 'before YouTube', uploading a video consisted of several steps that required advanced knowledge of compressing a file, converting it into an Internet-compatible format and then embedding it into a webpage. The complexity of the task ensured that the publishing of video narratives was out of reach for an 'ordinary' user. However, YouTube implemented algorithms that took over some of the complicated steps of video handling and in this way demystified the process of video publishing. In just a few easy steps, a video from a mobile phone, a camera or a computer can be uploaded to YouTube and shared or even embedded into a website. As Burgess and Green wrote, 'YouTube Inc. can be seen as the "patron" of collective creativity, inviting the participation of a very wide range of content creators and in so doing controlling at least some of the conditions under which creative content is produced' (Burgess & Green, 2008:1). The low resolution and short duration of uploaded videos create a certain aesthetic that distinguishes online video from other media.

However, this is a purely technical issue that can be resolved with the further development of computer performance and broadband transfer capacity. YouTube is a community practice, a social movement which is collectively co-created by users through their many activities – uploading, viewing, discussing and collaborating (Burgess & Green, 2008). As McWilliam puts it, 'Nevertheless, what the existence of sites like YouTube points to is the enormous profusion of individual creativity publicity, for which digital storytelling is a modest, but increasingly popular, format' (McWilliam, 2009:39).

Flickr, an online photo-sharing network for amateur and professional photographers, is another well-known example of Web 2.0 communities of practice. 3,000 images are uploaded every minute (Flickr.com). In September 2010, Flickr's users celebrated the upload of the five-billionth photo as a great success of the growing community. 'I am Mr. 5 Billion, and there ain't nothing you can do to stop me', Aaron Yeo, the photographer who uploaded the photo, wrote in its caption (Flickr.com, 20.09.2010).

Twitter is a website that was created in 2006 for social networking and microblogging. It enables its users to publish short, 140-character long, updates (known as 'Tweets') from the Internet or mobile phones. In 2011, 175 million people were using Twitter with 50% accessing it on mobile phones (twitter.com, March 2011). According to Twitter, in 2011, the average number of tweets per day nearly tripled from 50 million to 140 million. With a growth of 1100% a year, it has the fastest growth rate among member-based, community sites. Twitter's success lies in its simplicity, which makes the services easy to pick up for anyone even without any training or special skills. Most people stay away from holding a personal blog, as it requires a lot of maintenance. In contrast, Twitter offers 140 characters for each 'tweet', which can be mastered easily by almost anyone. People tweet their thoughts, moods, locations. Some interesting posts can initiate conversations involving several users who are physically miles away from each other.

The increasing popularity of online media-sharing networks like Twitter, Facebook and YouTube shows that the Internet is now fully mature as an audio-visual medium with people willing to participate and share their experiences with others. As Hartley and McWilliam note:

To these powerful social networking tools the digital story-telling technique adds individual imaginative vision, a 'poetics' of expression, and the necessary technical competence, offering people a repertoire of creative skills to enable them to tell their own unique stories in a way that captures the imagination of others whether close family members or the whole world (Hartley & McWilliam, 2009: 4).

If the early Internet was about consuming 'ready-made' information, Web 2.0 has an architecture specified for user-participation and contribution. The whole structure of Web 2.0 offers various opportunities for individuals to engage with a variety of creative experiences, to try out what is for many the completely new role of a creator. The websites that provide tools aimed at the modern user's needs for self-expression and which have made it easy to share user-made content are the ones currently experiencing the fastest growth in popularity. An increasing number of people, and especially the younger generation, are already actively involved in content production and distribution with the help of digital technologies and the Internet.

According to the web information company Alexa data, in June 2014, Facebook was ranked as the second most visited website after Google; YouTube was at number three and Twitter in ninth place (Alexa.com, June 2014). The increasing growth of social media networks demonstrates that adopters of digital networked technology welcome its participatory and liberating potential. Every year more people become consumers and producers of user-generated content. As Social Technographics reported in 2011, 79% of Europeans and 86% of US online users engage with social media.

Web 2.0-enabled portals like Facebook, YouTube and Flickr, as well as various blogging applications such as Twitter and Blogger, are designed to accommodate the natural human needs for social interaction and storytelling. People share their experiences, posting photos about important or pleasant events in their lives. They describe their attitude to other people and objects or just report on where they are and what they are up to at the moment. People put the creative effort they are capable of into making their stories more interesting or visually appealing to others. As Ruth Finnegan writes, in their self-narratives, 'people play a creative role in formulating both their own identities and, by extension, the culture in which they are participants' (Finnegan,

1997:77). She suggests that creative fulfilment is gained from social practices and more generally, from creating social meanings expressed through music, art, filmmaking or other creative activities.

Jean Burgess recognised the significance of the emergent cultural practices accompanying social media in relation to 'ordinary' people's creative production. In her doctoral thesis on vernacular creativity, she conducted a case study of the Flickr network (2007). She conceptualises Flickr not as a mere technological innovation applied to a photo-sharing service but as a social destination and a site of cultural practice. She cites Stewart Butterfield - chief executive officer of the company that developed Flickr- who sees Flickr as the means for connecting everyday vernacular photography with the networked public sphere. In his announcement that the services were to become 'the eyes of the world' he writes:

That can manifest itself as art, or using photos as a means of keeping in touch with friends and family, "personal publishing" or intimate, small group sharing. It includes "memory preservation" (the de facto understanding of what drives the photo industry), but it also includes the ephemera that keep people related to each other: do you like my new haircut? Should I buy these shoes? Holy smoke - look what I saw on the way to work! It lets you know who's gone where with whom, what the vacation was like, how much the baby grew today, all as it's happening. And most dramatically, Flickr gives you a window into things that you might otherwise never see, from the perspective of people that you might otherwise never encounter (Butterfield, 2006).

Burgess describes Flickr as an interactive environment that offers new modes of participation that promote exploratory and playful forms of engagement. 'As with games, users gain more rewards' the more they explore the new opportunities of a creative engagement – 'joining groups, participating in group discussions, undertaking photographic "challenges" developed within groups (as in, for example, the many groups who organise photographic "treasure hunts"', or attending offline meet-ups' (Burgess, 2007:140-141). During her two and a half year study of Flickr participants online and in 'real life', Burgess found out, that 'the participants' narratives of "becoming

photographers” reveal complex relationships among the knowledgeable consumption of technologies, learning the techniques and aesthetics of “good photography”, and participating in communities of practice, both online and off” (Burgess, 2007:157). It has also been revealed that those amateur photographers are also becoming increasingly ready to invest in more professional photographic equipment, as well as software, to achieve better results. However, some of her interviewees used rather ‘primitive’ devices but instead developed their personal, highly-creative approach to photography. In recurring patterns, the study participants tell their stories of the progress from beginner to an advanced ‘professional amateur’ level seeing the success in the correlation of new digital SLR cameras with computer and Internet participation. ‘Like their recollections of “learning computer”, their stories about learning photography were characterised by stories of playful and ongoing exploration, experimentation and discovery, articulated to ongoing technological knowledge and consumption’ (Burgess, 2007:161). Participants refer to Flickr as to a learning, teaching and exhibition space rather than just a social network. Many of them, who never thought of themselves as a creative person, reported the discovery and development of their personal creativity through digital photography and the exchange of experience with other users.

Some people discover the potential for creative use of digital technologies, and especially the Internet, with the wide range of tools that support production, processing and distribution of content as a new dimension for personal creativity and self-expression.

In the survey on everyday creativity and the use of computers for creative activities (Chapter 4), participants were asked to answer an open-ended question on what creativity meant for them. Many amazing descriptions of personal creativity from people of all ages from all over the world arrived, but one answer written by a retired Russian woman is loaded with such emotions and positive energy that it merits being cited here:

Having reached the retirement age and after retirement I was overwhelmed by depression by the awareness of how short a lifetime I had left. For my birthday I received a laptop from my family and that was the opening of new horizons for me, I was in seventh heaven from the happiness. I dived into the tremendous

dimension of the World Wide Web that was completely new to me and became totally absorbed in the classmates and fellow-student sites, searching for old friends and relatives. [...] Occasionally, I came over the Yandex photography site and ... got lost ... Some photographic works shared by non-professional photographers impressed me so much that I decided to try digital photography myself.

My family is still supporting me in this activity, although my husband already grumbles about my trips to museum-estates and other exhibition places. Nevertheless, each week he proudly brings me press-cuttings with the announcements about new photo expositions.

Creativity means for me now – the beginning of a new life and the possibility of exploring the world through the prism of the photographic lens.

Story writing, my old hobby, has thus far been set aside, probably waiting for the long, cold, winter evenings and the seasonable mood ... Writing occurs through my soul, and the life experiences stored there are not always happy and merry...

Awakening the memories is not easy sometimes, they come with tears and sobbing, with valerian and sedative tea, but also smile and joy... Life is so different and unpredictable, that not everything can be foreseen, and this is good... The most important thing is: I live, I have hobbies and interests, enthusiasm, which gives to me motivation, enormous positive energy and forgetfulness about the sores... (Anonymous female study participant, age 59-65, original text translated from Russian).

This is one of numerous examples showing how new-media technology opens up new opportunities for creative engagement, self-learning and the sharing of creative content and experience with other users. In Chapter 5 two other cases are described of people who discovered and started to use the creative potential of digital technologies.

Pickering and Negus (2004) argue that personal expression and narratives are important in making meaning out of our experience because through them we achieve communicative value. Creative communication and interpretation are part of everyday social life whereby 'creativity is judged in terms of its ability to communicate experience and its potential for this to be shared' (Pickering & Negus, 2004). As Raymond Williams

writes, 'there are, essentially, no "ordinary" activities, if by "ordinary" we mean the absence of creative interpretation and effort' (Williams, 1961:37). Our everyday lives consist of sequences of experiences which receive communicative value through our creative interpretation and adoption of meaning. This is a two-way communication, a dialogue between the author and the reader, between producer and consumer, the artist and the audience. Williams writes that, to succeed, art must 'convey an experience to others in such a form that the experience is actively re-created – not contemplated, not examined, not passively received, but by response to the means, actually lived through, by those to whom it is offered' (Williams, 1961:34-35).

Through the participatory structures of the new media technologies, content production and sharing belong to the common activities of everyday life. Through the domain of ICT and the Internet, users' everyday creativity is becoming increasingly present in the online world. Despite the debates that are taking place in academic circles on the acceptance of 'everyday creativity' into an elite domain of creativity, a growing number of people discover new opportunities for expression and communication of meaning. They create personal websites or blogs and participate in social media or other public online networks. Through participation in online spaces, users acquire new-media competencies and the domain-specific and technical knowledge required for amateur production. The immediacy of experience, peer support and recognition enabled through the digital and networked environment contributes, not only to people's creative awareness, but also increases self-esteem and confidence by enriching their everyday life with a creative dimension and social recognition.

Cultural implications of Digital Technology - From audience to producers.

Digital technologies are powerful forces of deterritorialization— of disembedding knowledge and culture from existing institutions, practices, and geographies - but they are also tools of continuous social and political reterritorialization, as borders are redrawn, new institutions and structures emerge, and new forms of control are established (Karaganis, 2007:11).

The expansion of digital technologies that started in the nineties initiated significant cultural transformations that can be regarded as an on-going process of digitalisation of life and social connections. However, Karaganis (2007) argues that new technologies are part of 'cultural innovation'. Each product goes through a process of exploration and adoption or rejection. New technology, socially defined and embedded in collective and institutional practices, serves as a driver for technical innovation, shaping the directions for development and research. In the time before digital media, where the 'top-down' production model dominated, investigation of public needs, preferences and wishes was possible only through targeted consumer research. Centralised production of broadcast media assumed an 'uncreative' passive audience that had no choice but to absorb the provided unitary content.

A mass culture produces a quiescent, passive mass of people, an agglomeration of atomized individuals separated from their position in the social structure, detached from and unaware of their class consciousness, of their various social and cultural allegiances, and thus totally disempowered and helpless (Fiske, 1989:19).

The recent developments in information and communication technology as well as the services of the World Wide Web offer new opportunities for obtaining, exchanging and storing information. In the new 'information environment', individuals are 'free to take a more active role than was possible in the industrial information economy of the twentieth century' (Benkler, 2006:2). Opposed to the deterministic model, the philosophical stance of 'voluntarism' described by Chandler (1995) stresses the 'free will' of individuals. It considers that human actions can be explained in terms of individual beliefs, intentions, preferences and choices. With regard to communications media, the voluntarist stance opposed to media determinism is sometimes referred to as 'audience determinism', whereby, instead of media being presented as doing things to people, the emphasis is on people doing things with media. Benkler offers an optimistic view of the new freedom, seeing it as a 'dimension of individual freedom; as a platform for better democratic participation; as a medium to foster a more critical and self-reflective culture [...], as a

mechanism to achieve improvements in human development everywhere' (Benkler, 2006:2).

A post-structuralist perspective sees freedom as an individual consumption choice. As Bauman puts it, 'for most members of contemporary society, individual freedom, if available at all, comes in the form of consumer freedom' (Bauman, 1988:58). From the mid-eighties, consumption-oriented cultural studies began to link consumption with production of meaning (Chambers, 1987; Fiske, 1989; Hebdidge, 1988). Cultural studies researchers such as Hebdidge (1988) and Chambers (1987) pointed out the creative potential of media consumption. They emphasised the active and meaningful engagement of consumers, who act as bricoleurs selecting and arranging elements of material commodities and meaningful signs (Barker, 2005). Michel de Certeau (1984) claims that consumers creatively navigate the territory of available goods and actively produce meaning in every consumptive act. Similarly, Willis (1990) writes that value and meaning are constructed through actual usage.

To a rationalized, expansionist and at the same time centralized, clamorous, and spectacular production corresponds another production, called "consumption." The latter is devious, it is dispersed, but it insinuates itself everywhere, silently and almost invisible, because it does not manifest itself through its own products, but rather through its ways of using the products imposed by a dominant economic order (Michel de Certeau, 1984:xii-xiii).

de Certeau (1984) defines two stages of production: the actual production of a representation by its makers and the secondary production hidden in the process of its utilisation by consumers. In his terms, he argues that 'popular culture' - as well as 'popular' as a term - is constructed through a 'way of thinking invested in a way of acting, an art of combination which cannot be dissociated from an art of using' (de Certeau, 1984:xi). In other words, popular culture comprises various modes of consumption.

However, it is important not to forget that there is no 'average user' or 'consumer'. All users 'are people with all the properties that go with being human: gender, history, politics, and beliefs' (Wright, 1995). They perceive and interpret the new media in their

individual ways, creating new meanings. Reception Theory, originally concerned with a reader's reception of a text, can be successfully applied to the new media audience. Within the context of reception theory, 'audiences are understood to be active rather than passive, to be engaged in a process of making, rather than simply absorbing, meanings' (Jenkins, 2002).

Consumers are learning how to use these different media technologies to bring the flow of media more fully under their control and to interact with other users. They are fighting for the right to participate more fully in their culture, to control the flow of media in their lives and to talk back to mass market content (Jenkins, 2004).

de Certeau defines the active consumption of texts as 'poaching': 'readers are travellers; they move across lands belonging to someone else, like nomads poaching their way across the fields they did not write' (de Certeau, 1984:174). With the term 'poaching', de Certeau rejects the traditional model of reading, in which reading is seen as the passive reception of textual content. Jenkins applies de Certeau's model to his 'fandom' theory. He sees fans as a 'community of consumers whose activities direct attention onto the process of cultural appropriation' (Jenkins, 2006:127). Jenkins' work is mainly based on de Certeau's definitions of active consumerism where consumption is closely bound to the production of meaning. However, Jenkins adds a community aspect to the model of active consumption. For Jenkins, fan reading takes place in communities where meaning is produced through discussions and exchange with other fan readers. He sees meaning as a 'shared and constantly renewable resource and its circulation can create and revitalize social ties' (Jenkins, 2006:140). Jenkins claims that 'the produced meanings are thus more fully integrated into the readers' lives and are of a fundamentally different character from meanings generated through a casual and fleeting encounter with an otherwise unremarkable (and unremarked upon) text (Jenkins, 2006:45). Subsequently, fan communities transform content they are interested in into their own, fan-specific, 'cultural capital' (Fiske, 1992). Jenkins' 'fans' appropriate texts, images and concepts drawn from the mass culture through the actual

'use' of them, not through absorption of the meanings embedded within them. 'In embracing popular texts, the fans claim those works as their own, remaking them in their own image, forcing them to respond to their needs and to gratify their desires' (Jenkins, 2006:59).

An example of such a fan activity is the 'Star Wreck' series, which is a Finnish parody on the popular TV Series 'Star Trek'. The fan-made series has existed since 1992 and is being produced by a group of students and unemployed people from Tampere on their home computers. The latest movie 'Star Wreck: In the Pirkinning' has been downloaded over 4 million times since its release, according to the film website.

Fish (1980) sees readers, as members of interpretive communities who share common strategies for making meaning. Multimodal texts on the web usually combine various digital media as images, sounds, videos and hyperlinks. Therefore, making meaning from the data involves not only 'interpretation', but also a creative process of 'design' (Kress, 2002) whereby people use the combination of available resources to construct their own meaning. In their observation of Internet users, Miller & Slater (2000:14) note: 'What we were observing was not so much people's use of the Internet but rather how they assembled various technical possibilities that add up to their Internet'. The meanings communicated by new media are a result of interactive collaboration between producers and the audience whereby the data is in a constant process of transformation and recombination.

According to John Fiske, fan culture has 'the productive power of audience'. He associates fandom with popular culture, seeing fans as 'subordinated formations of people' (Fiske, 1992:30) with community-specific cultural norms and tastes. Fans select 'from the repertoire of mass-produced and mass-distributed entertainment certain performers, narratives or genres' and take them into 'the culture of a self-selected fraction of the people' where they are 'reworked into an intensely pleasurable, intensely signifying, popular culture that is both similar to, yet significantly different from, the culture of the more 'normal' popular audience' (Fiske, 1992:30). For Fiske, all popular audiences engage in some semiotic productivity, producing meanings and pleasures according to their social situation out of the products of the culture industries. However, fans create a fan culture with its own systems of production and distribution that forms a

'shadow cultural economy' which runs parallel to cultural industries whilst simultaneously being closely bound to them.

Fan culture is not restricted to 'active consumption'. In fandom, the boundaries between consumption and production are blurred. Fans respond to media industries by producing their own remixes, images, texts, videos and other forms of media content. Fans were early adopters of digital technologies (Jenkins, 2006). Fandom appropriates new media forms for cultural production. In the early nineties, at the early stage of research on fandom, Jenkins wrote that fans operated from a 'position of cultural marginality and social weakness'. They lacked access to the means of commercial cultural production and therefore had no influence on the decisions of the entertainment industry.

The new digital environment offers tremendous opportunities for immediate communication. The Internet makes it possible to build online fan communities where people can exchange opinions, images, videos and information. The appearance of social networks allows everyone to create his or her own groups of interests in just a few steps. Such services as Twitter can be used on mobile phones to blog on the move. Online fan communities attract users from all over the world where people from different cultures find ways to communicate with each other on a subject of interest. Today, the online population is not 'culturally marginal and weak', but a powerful community of active consumers who can 'quickly mobilize grassroots efforts to save programs or protest unpopular developments' (Jenkins, 2006:142).

Since 2005, social network sites like Facebook, MySpace, Twitter and others turned online subcultures into the cultural mainstream with a permanently growing number of 'normal' Internet users who engage with some kinds of fan activity. New hardware and software technologies enable new forms of cultural production. As a result, music remixes, video footage, photo collages and many more products of public everyday creativity fill the World Wide Web with Terabytes of 'alternative' self-produced content.

In the digital age, the term 'audience', with a meaning of passive spectators of the media, increasingly loses its relevance. We can still refer to the 'audience' of broadcast mass media such as television or radio. However, if we talk in terms media convergence or different media in use, the most appropriate term would be media 'consumers'. Thus,

in the case of the Internet, 'consumers' become 'users' who engage actively with the technology. For Lievrouw and Livingstone (2006), this happens for the following reasons: the engagement with new media is contextualised into everyday life; consumers become users when they create meaning for new and unfamiliar technologies at home, work or school; new active modes of engagement with new media are brought permanently by technological progress: computer games, social networks and mobile technology. Clay Shirky recognised the trend against the 'powerful consumer' early:

In changing the relations between media and individuals, the Internet does not herald the rise of a powerful consumer. The Internet heralds the disappearance of the consumer altogether, because the Internet destroys the noisy advertiser/silent consumer relationship that the mass media relies upon. The rise of the Internet undermines the existence of the consumer because it undermines the role of mass media. In the age of the Internet, no one is a passive consumer anymore because everyone is a media outlet (Shirky, 2000).

More accessible new media technologies open up possibilities for amateur producers to become celebrities. However, it remains in the context of 'ordinary celebrity'. Only fifteen years ago, the gap between 'ordinary' and 'mainstream' was too broad to overcome for the general public; it was highly unlikely for someone from the 'ordinary world' to gain access to the means of representation and production. Today, 'ordinary' participation is an important part of the new media economy. We encounter democratisation of the media; theoretically, everyone who has something to tell can be 'heard'.

An active audience 'recycles' materials appropriated from popular mass media into its own cultural production. Several years ago, Lev Manovich started talking about remix and modular culture. Creative consumers adopt, interpret and remix existing information into new forms of media content. Manovich describes audience, user or receiver not as an end-point, but a 'temporary station' on the 'information path'.

If we compare information or a media object with a train, then each receiver can be compared to a train station. Information arrives, gets remixed with other

information, and then the new package travels to another destination where the process is repeated (Manovich, 2005).

As a result of a permanent circulation and exchange of information on a peer-to-peer basis, certain interpretations, norms and aesthetic criteria are constructed within communities of the participating audience. Most of the social networking and content-sharing portals like YouTube, Flickr, Facebook and diverse photo-sharing websites offer ranked hierarchies of posted content. Ranking usually depends on user-rating and popularity. In this way, the community develops shared criteria, according to which the content is being evaluated and rated.

Jenkins (2004) defines any kind of group where people meet and 'share their views on a common topic' as an 'interpretative community'. This term was originally proposed by Stanley Fish in his book "There is a Text in this Class" (1980). According to Fish, an interpretive community is a 'not so much a group of individuals who share a point of view, but a point of view or way of organizing experience that shares individuals' (Fish, 1989:141). He describes readers as members of interpretative communities, who share common strategies for making meaning. He argues that meaning is constructed in the process of reading and thus emerges from the interaction between the text and 'the reader's expectations, projections, conclusions, judgments, and assumptions' (Fish, 1980).

In the digital age, the most common examples of such communities are online forums, blogs, fans' websites, content-sharing and social communication portals like Facebook, Myspace, Flickr and YouTube. There, people exchange their views, ideas and self-produced content on a common topic that fits within the contextual boundaries of a specific online group. With every new post, initiated discussion and interpretative claims may differ, but, as Jenkins (2000) notices, 'over time, the group agrees what kind of posts are appropriate'. The community itself decides what is "good" and what is "bad", what can be considered "creative", "interesting" and/or "entertaining". Content with the highest user rating becomes a temporary celebrity within the community and even outside it. For example, the popularity of video content of the growing user video-sharing portal YouTube exceeds the range of the Internet and is being shown as a Television programme "The Best of YouTube".

As in 'real life', in online communities, people interact within established cultural boundaries. They perceive 'the new' by converting it into meanings and values that characterise their group as a kind of interpretive community. In the process of appropriation, artists are the audience, creators are consumers.

All writers are already readers; their previous encounters with other texts shape what they are able to create. They can only communicate within the terms their culture gives them. Writers struggle to constrain the associations that accompany their borrowed terms, so they may fit comfortably within their new contexts (Jenkins, 2000).

It is not rare that the active audience goes further than the re-contextualisation of new content. Digital technologies and the Internet lowered the barrier to access the media production. As a consequence, media products have lost their fixed form as shaped by the author. Every text, digital image, video, sound and animation can be physically re-shaped or re-mixed into an alternative version of the old or even a completely new piece. Henry Jenkins (2000) gives an example of fans who wrote alternative endings for the film "Thelma and Louise" (1991). In one case, the female characters transform themselves into bats. The fan re-interpreted the film as a lesbian vampire story that was idolised by the lesbian and vampire subcultures. This example illustrates how communities appropriate and re-interpret existing material into their 'own' meaning. The active audience becomes a part of media production, at the same time setting itself apart from commercial processes. Communities, standing aside from the commercial media create their own derivatives of the mass-produced content. Supported by the possibilities of the new technologies, the process of appropriating mainstream media results in amateur production of popular culture.

Recent audience research outlines the evidence for two types of audience behaviour - 'appropriation' and 'resistance'. The resistant response is born out of an alternative media culture driven by marginalised communities that produce their identity in communication outside the corporately-controlled media (Jenkins, 2006). In 1993, Dery described the emerging tactics of grassroots resistance (media hacking, informational warfare, terror-art and guerrilla semiotics) as 'an ever more intrusive,

instrumental technoculture whose operant mode is the manufacture of consent through the manipulation of symbols'. Subcultures of all kinds such as rockers, queer activist and third-waver feminists, among others, produced posters, T-shirts and buttons as signs of their community-belonging and political expression. Dery (1993) referred to all forms of Do-It-Yourself media as 'culture jamming'. As Jenkins notes, jammers resist becoming passive consumers and insist on their rights to 'insert alternative ideas into the meme-stream' (Jenkins, 2006:149). 'Culture jammers want to 'jam' the dominant media, while poachers want to appropriate their content, imaging a more democratic, responsive and diverse style of popular culture' (Jenkins, 2006:149).

Jenkins (2006) describes 'poachers' of fans as those who appropriate popular culture, actively participating within its context and expanding its boundaries. He sees fan culture as dialogic, affective and collaborative. In contrast, 'jammers culture' is ideological and disruptive.

Today, culture jammers, fans, marginalised communities and general users have gained a greater access to the means of cultural production. Computer technology and the Web offer the means for community building, immediate interaction, self-expression and democratic media participation for almost everyone. New media theorists Lievrouw and Livingstone stress that '...media engagement is necessary for a common culture, for shared community values' (Lievrouw and Livingstone, 2006:27).

The democratising opportunities enabled by the Web 2.0 technology can on the one hand, bring empowerment and freedom to produce, remix and distribute user-generated-content on the Web. On the other hand, the users of web services supply personal information to service providers that is used to create economic value. Thus, as Proulx et al. (2011:22) argue, the actual use of the Internet 'helps reinforce a production system that we have termed informational capitalism'.

Communities and collective action is not a radical innovation brought about by Web 2.0. However, the new type of collaboration and community-building is not limited to the local availability of subjects wanting to participate. Instead, the global network enables transboundary connections of people according to their interests and aims not bound to their physical location. This opens up new opportunities for experience exchange, learning and collaboration that can involve people of different levels of expertise. According to Proulx et al. (2011), two conditions are required for

empowerment through the use of digital technologies: the consciousness of community and the ability to act collectively.

In order for empowerment to be significant, social subjects must think of themselves on the one hand as being part of an epistemic community (that is, as a focus for the collective production of shared knowledge that circulates and is shared freely and so continues to grow) and on the other as collective actors (that is, able to intervene efficiently in the public sphere). The co-existence of these two conditions generates a collective and democratic power to act (Proulx et al., 2001:15).

Proulx et al. (2011:19) recall that specific services like Facebook are technical tools that cannot 'generate social practices of symbolic resistance or a collective cultural or political power to act'. Instead, the use of such tools supports 'existing practices of resistance or creative hijacking to the extent that it is anchored in processes of social and political awareness already at work in the collectivities concerned'.

This research sees new technologies affect those already existing and shape new social practices, whereby the tools are often re-purposed as they are being used. Digital technologies and the Internet enabled bottom-up collaborative creativity that brought into existence new forms of social practice: Wikis, citizen journalism, the Free and Open Source movement, Blogs, virtual realities, Podcasts and many other opportunities for amateurs, professionals and general users to engage in cultural production. In line with new media optimists (Jenkins, 2006; Leadbeater and Miller, 2004; Proulx et al., 2011), the liberating potential of digital technologies for grassroots creativity and learning built on the strength of communities and collective action seems clear.

Chapter 3: Amateur Practices in Online Participatory Environment of Web 2.0.

'Amateurism extends back further than one hundred years in some fields. Mass amateurism, however, bloomed with the shortening of the work week in this century' (Stebbins, 1979:267). Amateurism as a leisure activity existed long before it had to be opposed to professionalism in each discipline. An amateur usually describes someone attached to a particular pursuit in art, craft, music, sport, science etc. and who does not make his or her living out of it. The word itself originates from French and means "Lover Of". Generally, amateurs do not have any formal training and often do not receive any monetary gain from their activity. Historically, amateurism emerged with a gradual professionalization of individual spheres. The term 'Amateur' was introduced to distinguish non-professional part-time activity that previously was regarded as play in contrast to professional activity. Amateurism exists only in opposition to professionalism. In other words, there are no amateurs in fields where there are no professionals.

The boundaries between 'amateur' and 'professional' were not always clearly defined. Today, the term 'amateur' is mainly used as opposition to 'professional' and often implies 'a performance of marginal proficiency practised by those who lack commitment, are partially trained or want in talent' (Gaze, 2001:55). In contrast, in the 19th century, amateurism was a zealously guarded ideal among the wealthy upper classes. Amateur practices required time and money and were out of reach for the majority of the population. During the 18th century, the term 'amateur' also implied another meaning. It was used to indicate a member of the upper classes who is a passionate, highly knowledgeable collector of, or expert in, art. The art-making itself was a lower- or middle-class activity and upper-class amateurs usually did not engage in this 'dirty' work (Gaze, 2001:55).

The 20th century is characterised through the professionalization of many areas and the mass-production of culture. Ivey and Tepper (2006) describe three major trends of the 20th century that affected the amateur art-making and lead to a decline in the numbers of individual artists and an increase in the numbers of professional non-profit art organisations: 1) technologies enabled capturing, broadcasting and distribution of art on a mass scale; 2) vernacular art and entertainment was eclipsed by the mainstream

culture and affected by it; 3) the audience was socialised to be passive consumers of professionally-produced entertainment and art. By the end of the century the arts had become highly institutionalised and professionalised. The amateurs in arts were overshadowed by the professionals. The term 'amateur' took on a negative meaning and was often used to describe someone who is not trained producing poor-quality work far from professional standards.

Today, we can experience the rise of amateurism in many areas, initiated by the growing ubiquity of digital technologies. Ivey and Tepper (2006) are talking about the next cultural transformation that Jenkins (2007) calls 'a revitalisation of folk culture'. The Internet offers channels for communication and publishing that bypass the mainstream media and allow reaching the audience or the similar-minded directly. The World Wide Web with its participatory architecture makes it possible to search for information, to acquire knowledge and skills, to connect to communities of other amateurs and professionals, to produce and publish content, to communicate and to receive feedback on one's own practice. On the one hand, democratisation of production and publishing opportunities served as the initial impetus for the masses to 'play around' with the new tools thereby producing terabytes of digital content that is neither interesting nor valuable to anyone. However, in some cases dabbling can lead to a greater commitment and interest. Every amateur was at some point in time a novice who, merely intrinsically motivated (without expecting any material reward), invested time and often money to acquire skills and gain expertise in the area of interest. On the other hand, in some areas, online communities of highly motivated amateurs work to professional standards and even achieve better results than their professional colleagues. Open Source software projects or citizen journalism are among the popular areas that rely on committed amateurs and community support. The participatory turn in the consumption of culture and the growing ubiquity of communication and information technologies gave birth to other types of amateur production (e.g. 'crowdsourcing', 'produsage') that are discussed later in this chapter. In sum, amateur practices in many areas are experiencing a comeback relying on the Internet as a platform for self-publishing and communication.

It has to be acknowledged, that amateurism is a complex concept that involves different levels of commitment and qualities. This chapter is set to position contemporary

digital technology-based amateur practices within the existing research on amateurism and amateur production.

The Serious Leisure Perspective

Stebbins started to talk about mass amateurism long before the digital era. In the mid-70ies he began to study amateurism which he saw as 'one of the most complicated and currently one of the most neglected facets of modern leisure' (Stebbins, 1979:16) and made an attempt to distinguish the amateur from professionals working in the same field and from dabblers 'who play at it'. He found out that amateurs often fail to attain professional standards only in some points such as specialised knowledge, professional recognition and emphasis on standards and service. Nevertheless, amateurs serve the same audience as professionals and are 'oriented by standards of excellence set by those professionals' (Stebbins, 1979:24).

Stebbins made a significant contribution to understanding amateur practices. He developed a 'serious leisure perspective' that encompasses three main forms of leisure: serious leisure, casual leisure and project-based leisure. His term "serious leisure" refers to the 'systematic pursuit of an amateur, hobbyist, or volunteer core activity that people find so substantial, interesting, and fulfilling that, in the typical case, they launch themselves on a (leisure) career centred on acquiring and expressing a combination of its special skills, knowledge, and experience' (Stebbins, 2007:13-15). This contrasts with casual leisure which is "...immediately [an] intrinsically rewarding, relatively short-lived pleasurable activity requiring little or no special training to enjoy it" (Stebbins, 1997:18). *Project-based leisure* is 'a short-term, moderately complicated, either one-shot or occasional, though infrequent, creative undertaking carried out in free time' (Stebbins, 2005). Serious leisure is distinguished through six main qualities: 1) the need to persevere at the activity, 2) the availability of a leisure career, 3) the need to put in effort to gain skill and knowledge, 4) the realization of various special benefits, 5) a unique ethos and social world, and 6) an attractive personal and social identity. Serious leisure is motivated through several personal and social rewards (e.g. self-fulfilment, self-development, social contribution and belonging) (Stebbins, 2007:13-15). During his over-twenty-years research on amateurs, Stebbins (2007) found out, that serious leisure

participants identify themselves strongly with their chosen pursuit in contrast to casual leisure that is more about short-term enjoyment. The reward for a serious leisure activity is a strong sense of personal fulfilment, realisation of one's creative potential or, in Maslow's terms (1943), self-actualisation. Due to these powerful personal benefits, people often feel passionate and addicted to their amateur, hobbyists or volunteer activities - often making them into a lifestyle.

Stebbins (1992) divides those engaged in serious leisure into amateurs, hobbyists and career volunteers. Amateurs who are found in art, sport, entertainment and science can compete with professionals. However, they are engaged part-time in an activity that is usually not their main source of income. For instance, amateur or voluntary arts are very popular in the UK. In 2008, research by the Department for Culture, Media and Sport found that there were about 49,000 amateur arts groups in England, with 9.4 million people regularly taking part (DCMS, 2008). Voluntary or amateur arts groups, which are often highly motivated, highly organised and self-supporting, offer a challenge to conventional concepts of participation and passive consumption. Milling and McCabe (2013) warn against viewing the amateur arts as a separate sector as they indirectly benefit from governmental support for professional arts (e.g. venues, training, etc.): 'at core, amateur participation in creative cultural and artistic activity is the facilitating precursor to the acquisition of aesthetic knowledge, skills and activity out of which all professional practice emerges and to which it must relate' (2013:5). Although inseparable from professional arts, amateur practices can be described as community-based, driven mainly by intrinsic motivation or, in other words, by the joy of making. Some amateur communities are dedicated to the rare art forms, not found in the mainstream. Such art forms as folk dance and specific crafts have only survived because of the enthusiasm of amateurs.

Photography is another popular discipline that attracts many amateurs and hobbyists. An interesting example of amateur practice is astrophotography – photography specializing in recording images of the night sky or astronomical objects and processes. Whereas amateur photographers engage with astrophotography merely to take aesthetically pleasing images of the night sky, serious amateur astronomers use it to collect scientific data. There is a range of online communities (e.g.

amateurastrophotography.net) that include showrooms, tutorials and forums aiming to connect interested amateurs to exchange experience and present their work to others.

Similar to amateurs, hobbyists are driven mainly by self-interest rather than altruism, but they lack their professional counterparts. “A hobby is a specialised pursuit beyond one’s occupation, a pursuit that one finds particularly interesting and enjoyable because of its durable benefits” (Stebbins, 1992: 10). In a broader concept, hobbyists lack the professional alter ego of amateurs and are mainly rewarded through pleasure and enjoyment of their activity. Hobbyists are often involved in arts, sports, games and other activities that sometimes, but not necessarily, attract the interest of a small public and bring a financial reward. There are many people who engage with painting, crafting, making clothes and jewellery in their leisure. Today, there are numerous Web 2.0 platforms with easy-to-use tools that allow the presentation and sale of those hand-made pieces to interested people worldwide. The US-based “Etsy”, “DaWanda”, based in Germany and “ezebee”, based in Switzerland are some examples of such peer-to-peer websites focused on handmade items and supplies. Usually, they cover a wide range of products, including art, photography, clothing, jewellery, food, bath and beauty products, quilts, knick-knacks and toys (etsy.com).

The career volunteer formally or informally supports professionals in carrying out assigned tasks and, in doing so, serves the public or a client. At least sixteen different areas offer opportunities for career volunteering: the provision of necessities, education, science, civic affairs, spiritual development, health, economic development, physical environment, religion, politics, government, safety, human relationships, the arts, recreation, support services and informal volunteering (Stebbins, 1998). A good example of volunteering in science is ‘Clickworkers’ – an experiment run in 2000-2001 by NASA. The project used public volunteers for routine time-consuming scientific tasks that did not require special training. An analysis of the quality of markings showed ‘that the automatically computed consensus of a large number of ‘clickworkers’ is virtually indistinguishable from the inputs of a geologist with years of experience’ (Leadbeater and Miller, 2004). As a result of the successful scientific crowdsourcing, in 2009, NASA partnered with Microsoft to allow citizen scientists to experience Mars through improving maps, taking part in research tasks, and assisting Mars scientists by counting craters (nasa.gov). According to Community Life Survey, in 2012-13 44% of UK adults

volunteered formally (giving unpaid help through a group, club or organisation) which is an increase from 39% in 2011. Sports, recreational, arts, social clubs are among the most popular activities for volunteering.

According to Stebbins, every instance of serious leisure takes place in a unique social world that comprises 'sets of special norms, values, beliefs, styles, moral principles, performance standards, and similar shared representations' (1999:71). He uses Unruh's (1980:277) definition of a social world that 'must be seen as an internally recognizable constellation of actors, organizations, events, and practices which have coalesced into a perceived sphere of interest and involvement for participants'. Stebbins argued, that with increased commitment to serious leisure a unique social world grows around this activity. It provides a basis for individual's identity-formation and social stratification within this social world. This concept has certain parallels to Becker's 'Art Worlds' (1982) described in Chapter 1 and Bourdieu's (1993) theoretical framework for understanding of social practices and interaction through his concepts of 'fields' and 'habitus'. Bourdieu's 'field' is a much more complex theory that does not serve to rate the degree of commitment through the lens of serious leisure affiliation but rather helps to interpret and analyse the nature of social practices in terms of a structure of social positions and power relationships.

Stebbins sees serious leisure as a desirable social norm with individual and social rewards those involved. Nevertheless, he admits, that involving 15-25% of the population serious leisure is not a mainstream activity (2007:76). He also describes it as predominately involving men and higher educated and fortunate groups. For Stebbins, training and acquisition of skills is a key factor that enables serious leisure and thus, the 'optimal leisure lifestyle' (2007:134). Stebbins' categorisation of leisure is thoroughly helpful for understanding the nature of amateur practices and their relation to professional areas. Despite that, there is a lack of a broader perspective that involves such factors as motivation for serious leisure and learning as well as the social implications.

The 'new' amateur practices

A serious leisure perspective is especially relevant today when we experience 'mass amateurisation' (Shirky, 2008) - a boom of amateur media production and the flood of UGC enabled by the participatory architecture of Web 2.0. The growing ubiquity of information and computer technology (ICT) brought the means of media production and distribution into the hands of non-professionals. Affordable prices for hardware and software, the ubiquity of the Internet and mobile technology and user-friendly tools attract more people than ever before to create and publish digital content or to capture their own leisure or amateur activity and publish it online in the form of diaries, blogs or in social networks. The Internet offers access to information, online tools for communication and publishing as well as direct access to the audience. The Internet made information a public good. Thus, acquisition of knowledge has become a matter of personal requirement and time. The widely available online information resources and communication channels provide amateurs with opportunities to enhance their skills, to compete and collaborate with professionals. Communicating and publishing opportunities offered by the digital technologies - including personal computers, mobile devices and the Internet - make it possible to build online communities that function similar to Becker's Art Worlds (1982) that provide information, tools, support and social judgment. This trend of 'mass amateurisation' (Shirky, 2008) may change the status of serious leisure from being an elite pursuit of wealthy educated men (Stebbins, 2007) to one that is more accessible for everyone who has time and motivation to engage seriously with an activity of interest.

As described in the previous chapter, many scholars (Jenkins, (2006); Leadbeater and Miller, (2004); VanDijck, (2009) and Keen, (2007)) debate the rise of mass participation in media production enabled through the participatory and collaborative opportunities of the digital technologies including the Internet, computers and mobile devices. Although most of them agree on the social changes that stretch over the cultural, economic and political spheres, the views whether these effects are positive or negative differ. Critics raise concerns about the mediocre quality of user-published content (Keen, 2007), loss of control of personal data (VanDijck, 2009), reliability and quality of the information available and the loss of authorship through the

fluidity of digital data. In contrast, communicational optimists (Leadbeater and Miller, 2004; Jenkins, 2006) see a great promise in active media participation as an opportunity for learning, creative expression, civic engagement, political empowerment and economic advancement. This research suggests that amateur media content does not replace or threaten the professional content but rather complements it. This supports the argument advanced by Richard MacManus (2005) who believes that the democratisation of media technologies positively affects their quality: 'It is true that Web 2.0 is changing the economics of creative works, but quality will always rise to the top. Whether it's mainstream media or "amateur"'.

The digital technologies and the Internet gave birth to a new type of serious amateurs who, individually or through collaborative effort, work to professional levels and in this way create economic value and contribute to common culture. These new amateurs have been described by some scholars as follows.

Pro-Ams

Leadbeater and Miller (2004) call the new breed of amateurs 'Pro-Ams'. They are knowledgeable, educated, skilled, no less committed than the professionals, but do not derive their main income from these amateur activities. Leadbeater and Miller observed that people are engaged in their leisure activities with different intensities. Therefore, they see the urge to distinguish 'serious leisure' which requires commitment, skills and effort from 'casual leisure' that is a merely 'occasional dabbler' activity. Leadbeater and Miller developed a diagram that represents a continuum of five groups between amateurs and professionals. Fans, dabblers and spectators are at one end of the spectrum and fully-fledged professionals are at the other. The three groups in the middle are skilled amateurs, serious and committed amateurs and quasi-professionals, of which the latter two groups are Pro-Ams. Skilled amateurs are distinguished from amateurs who do not make their work public. Pro-Ams are distinguished through their motivation and commitment as they 'work at their leisure, regard consumption as a productive activity and set professional standards to judge their amateur efforts' (p. 19). Moving along the continuum corresponds with the growing amount of knowledge required, time invested in the activity and money earned from it. Often, starting as fans or dabblers,

people acquire skills and knowledge and move along the continuum towards the end of the scale occupied by professionals. This requires regular commitment, time, and money for equipment, tools and information. Support from a community of the similar-minded is an important aspect that helps an individual to move further and gain expertise.

To distinguish those involved in serious leisure from amateur dabblers, Leadbeater and Miller write:

Pro-Ams are a new social hybrid. Their activities are not adequately captured by the traditional definitions of work and leisure, professional and amateur, consumption and production. We use a variety of terms – many derogatory, none satisfactory – to describe what people do with their serious leisure time: nerds, geeks, anoraks, enthusiasts, hackers, men in their sheds. Our research suggests the best way to cover all the activities covered by these terms is to call the people involved Pro- Ams (Leadbeater and Miller, 2004:20).

With Pro-Ams, Leadbeater and Miller describe a not very large group of committed amateurs who want to be judged according to professional standards and identify themselves strongly with the activity. Their Pro Ams are ‘highly-motivated, skilled and enthusiastic amateurs who shape a bottom-up, self-organising community that can achieve things that, until recently, only large, professional organizations could achieve’ (Leadbeater, Miller, 2004:12). Although the pro-am activities take place outside working hours, they often have shadow or parallel careers. The authors view the current surge in non-professional creativity as a ‘new ethic of amateurism’ that ‘could be one of the defining features of developed society’ (2004:22).

They give a number of examples of successful examples of Pro Am activity. For instance, Free and Open Source software relies on the joint efforts of ‘professional amateurs’ from all over the globe whose work results in high-standard software products available at no cost for general use. The advantages of such a collective approach lie in free will and openness. Bugs are quickly found and eliminated, new features are added and new versions follow promptly. Such collaborative efforts result in a vast development of innovative products that serve the needs of a growing digital community,

often overtaking commercial products in popularity. For Leadbeater, the 'inbuilt impulse for collaboration lies at the heart of the economic power of Pro Ams' (2008:34).

Leadbeater and Miller (2004) position Pro Ams as a group of knowledgeable amateurs who work parallel to professionals and whose strength is their know-how and community. However, the empirical basis for this model and its generalisability across different areas and contexts is questionable. First, most Pro Am activities rely on collaboration with professionals or use professionally-build frameworks for organisation, communication and publishing. In the example of the Open Source and Free Software community, the majority of projects involve professional software developers who write the code in their free time. Skilled amateurs and the end users usually test the software and search for bugs or make suggestions for improvement. They provide feedback and help the developer to optimise the program. Probably, a small group of Pro Ams who run their parallel careers as software developers would contribute by coding smaller modules, extensions or derivative projects. However, the success of the Open Source movement is in volunteering and the power of collaboration rather than the limited capability of a rather small group of committed amateurs working to professional standards. Most open source projects are open for everyone to contribute independently of their skill level. Citing the Moroccan Rubyist open-source project, 'any open source project is only as good as the community behind it' (moroccanrubyist.com). The boundaries between professionals and Pro Ams are fluid and often both parts benefit from collaboration and the strength of a community and joint efforts.

Crowdsourcing

The people that Leadbeater and Miller identify as Pro-Ams are partly defined through their ability to use the capacity and resources offered by digital technologies efficiently.

In his later book, Leadbeater (2008) describes the economic power of 'pro-am tribes' who interact in communities of shared interests that contribute to innovation through sharing. He writes, 'Ideas do not live in the minds of individuals but through constant circulation as gifts (Leadbeater, 2009:35). Shared knowledge in various forms such as ideas, information, tools or software provides the basis for such communities

that aim to generate 'more knowledge'. This concept that utilizes the power of shared knowledge is known also as crowdsourcing. The term was coined by Jeff Howe in Wired Magazine in June 2006. He wrote:

Technological advances in everything from product design software to digital video cameras are breaking down the cost barriers that once separated amateurs from professionals. Hobbyists, part-timers, and dabblers suddenly have a market for their efforts, as smart companies in industries as disparate as pharmaceuticals and television discover ways to tap the latent talent of the crowd. The labor isn't always free, but it costs a lot less than paying traditional employees. It's not outsourcing; it's crowdsourcing (Howe, 2006).

Since then, crowdsourcing has turned into a popular concept that is used by many companies for various purposes. Some announce a call for entries to design a postcard, a slogan, or even a new logotype for a small reward. Such projects are based on the public's striving for participation, creativity and recognition. The result is a cheap advertisement campaign and often a good choice of submissions from which to select.

Two years after Howe's article, Brabham (2008) provided a more general definition of crowdsourcing as a concept' calling it 'an online, distributed problem-solving and production model whereby an organization leverages the collective intelligence of an online community for a specific purpose'. He warns that 'crowds are not, on their face, comprised mostly of amateurs. They are largely self-selected experts and what we might otherwise call professionals, who seek opportunities to make money, express themselves, build portfolios for future employment, and enjoy all the responsibilities and trappings of serious leisure' (Brabham, 2012). In other words, he is talking about the same group of skilled amateurs who work to professional standards described by Leadbeater and Miller as Pro-Ams.

Initially, crowdsourcing was understood as the outsourcing of specific tasks or functions by a company to a wider population in the form of an open call. Pierre Lévy (1997:13) describes this concept as 'a form of universally distributed intelligence, constantly enhanced, coordinated in real time, and resulting in the effective mobilization of skills'.

According to Surowiecki (2004), the concept of collective intelligence has been popularized as the wisdom of the crowds that can be gathered and used for specific tasks. This concept of collective intelligence and its potential has often been discussed in academia and the mass media. In general, researchers (Leadbeater and Miller, 2004; Benkler, 2006; Rheingold, 2002) agree that crowdsourcing can be used as an efficient model in some areas.

Crowdsourcing can be applied to a wide range of activities. It exists as a business model, innovation model, a solution for problem-solving, outsourcing of specific tasks to a wider population or even to projects in the creative sector. Concepts related to crowdsourcing are open innovation (Chesbrough, 2003), user innovation (Von Hippel, 2002) and co-creation (Prahalad and Ramaswamy, 2000).

Open, self-regulated, peer-to-peer communities usually rely on the concept of crowdsourcing. Wikipedia is a popular example of such communities. The online encyclopaedia, based on the idea of Web 2.0, illustrates a model of a collaborative knowledge base. By 2012, there were more than 76,000 active contributors working on more than 34,000,000 articles in more than 285 languages¹⁴. People spent time outside their work to write high-quality articles and give them away for free. Other people spend hours editing existing articles, making corrections, adding details and translating articles into other languages. In that way, Wikipedia has become one of the most popular resources of shared knowledge that is permanently updated and read by millions of people all over the globe.

The free software and open source (FLOSS) community is probably the concept most associated with crowdsourcing as it would be impossible without public participation. FLOSS relies on the 'openness' of the software code, as was common in the early years of coding. This makes possible 'building on the work of others' (Lessig, 2004). This type of crowdsourcing lead to a vast innovation in software development and it builds a strong concurrence for propriety software developers. Moreover, such software giants as Google recognised the economic value of shared knowledge and collaborative creativity. Google has released over 20 million lines of code and over 900

¹⁴ <http://en.wikipedia.org/wiki/Wikipedia:About>, accessed November 2014

open source projects (developers.google.com, 2014). The most popular examples are Android, the software stack for mobile devices, and the Chromium projects (the open source projects behind the Google Chrome browser and OS). Google Code provides a free collaborative development environment for open source projects.

Stock photography databases like iStockphoto.com or Fotolia.com are another example of crowdsourcing. They allow photographers of all levels to upload their works for sale, royalty-free to buyers. Crowdsourcing projects are available in many further areas including industrial and clothing design, astronomy and science. For instance, InnoCentive.com offers to solve real challenges and problems whose solutions have value for organizations for substantial cash rewards.

Crowdsourcing is often criticised for its inefficiency, exploitation of the crowd for economic value and as a waste of human resources. Crowdsourced projects that are poorly organised often request contributions from a random population for a material reward. This can result in a high response rate with a huge amount of data that cannot be used for the intended purposes. Instead, many companies who rely on crowdsourcing build a community of customers or contributors who are already familiar with the company's concept and targets and, therefore, are more likely to generate useful data.

An example for the waste of human resources that is often mentioned is a design award. In such cases, for instance, a company sets out an open call for the design of a new logotype. The winner usually receives a good monetary reward. This often results in hundreds of submissions of logotypes and many hours of designers' work. One design will be picked out and all other work discarded.

Chris Grams in his article of 'Why the open source way trumps the crowdsourcing' criticises the inefficiency of crowdsourcing compared to the open source methodology where all contributions can be used and built upon.

Despite the limitations discussed above, in some cases crowdsourcing can lead to innovative ideas and provide creative results. In some cases, as for instance software testing or non-profit projects for the translation of famous works, crowdsourcing is successfully used to find bugs and mistakes that help to optimise the quality of the product.

Crowdsourcing is a collective activity that relies on the sum of individual contributions to a collective pool.

Blogging and other examples of serious leisure

There are other examples of the use of digital technologies for serious leisure. In contrast to crowdsourcing, which is merely a collective activity, blogging is an individual activity that is aimed at bringing the blogger's experiences to a wide audience. Blog is the shorter form of the term 'weblog' that is usually used for websites or parts of websites that individual users publish as online journals displayed in a reversed chronological order. A blog can have any form and utilize any kind of digital media. It can be dedicated to a specific topic or serve as a publishing space for human creativity. Blogs have evolved to be key drivers of news and discussions online due to their simplicity of maintenance and immediacy of output. Most blogs allow other users to post comments or take part in online discussions. The activity of updating a blog is 'blogging' and someone who keeps a blog is a 'blogger'. 'Blogosphere' is the global community that encompasses all existing individual and interconnected blogs on the web. The Blogosphere forms a significant part of the modern online public sphere comprising a network of interlinked communication spaces.

Blogging is often used by serious amateurs to publish their work and connect to other amateurs. For instance, it is the most conventional method of modern citizen journalism. Many writers, musicians, photographers and other artists often use blogging to test new ideas and to receive feedback. Also, an increasing number of professionals who have recognised the benefits of direct communication with the audience publish their draft work online to test it against public opinion. Charles Leadbeater, one of the world's leading authorities on innovation and creativity, conducted such an experiment with his latest book 'We-Think' (Leadbeater, 2009). He describes it in his introduction:

What I have sought to do with this book is to open up the normally closed process of drafting. [...] If you trust people and throw things open, they will respond. [...]

Since I put that early draft online in October 2006, the material has been downloaded on average 35 times a day; about 150 comments have been posted on the site about the text; it has been mentioned on more than 250 blogs; I have received about 200 emails from people wanting to point me in the direction of useful information. [...] A number of people took the time to make really detailed comments, which were often challenging and improved the book at the end. [...] I cannot imagine writing another non-fiction book in another way (Leadbeater, 2009:xi-xiii).

Leadbeater's experiment in the collaborative writing of a book showed that there is a huge potential in engaging the audience in developing and debating ideas. However, that does not replace the work of professional editors and writers required to prepare the text for publication. As the author argues, finding the right ways to combine professional and amateur, open and collaborative, ways of working with a more traditional and closed approach can lead to creative and innovative results.

Many different types of blogs exist. There are bloggers who blog in pictures, without much description. In contrast, a journalist's or writer's blog is probably overloaded with text. There are blogs that combine different media. Cox and Blake (2011) conducted research into food blogging, examining it through the lens of serious leisure. For them, food blogging 'typically represents a complex interweaving of "foodie" or gourmet interest in cooking, blog writing (and so internet use) and photography' (Cox and Blake, 2011:4). They see food blogging as a serious practice that combines consumption and a serious leisure pursuit. Cox and Blake interviewed six UK food bloggers who had a relatively sustained food blog; and had a collection of photos on Flickr. The researchers' primary interest was to establish a connection between food blogging, use of computers and the Internet and photography through in-depth interviews and an examination of online collections of dedicated photographic works. They found that food blogging involved the creation, selecting and organisation of a lot of content, especially photos, which is time-consuming and requires skills for photo-processing, information management and organisation as well as writing skills. Although the interviewees were long term and sophisticated users of Internet technologies, they found 'complex coordination of multiple web sites, material and virtual practices, text and

photos' challenging. The low awareness of personal information management concerns had also significant implications on the design and organisation of blogs. Cox and Blake (2011) conclude that although blogs are easy to set up, maintaining them is complex and time-consuming, which a possible explanation of the relatively low number of users who maintain a personal blog.

An alternative solution is membership of a dedicated online community that provides a website that allows members to set up a personal profile, upload photographs and other media, communicate with other users and write and receive comments. Such services can be used intuitively; they provide a framework for the organisation and management of information and do not require specific knowledge or skills. They are also more popular among the audience as such websites contain a searchable database of user profiles and their data and usually allows the addition of favourites to a personal collection. In the case of food blogging, one can search for a dish or ingredients, for an author, the best rating or other criteria. Hobbyists and amateurs can use such services to connect with other amateurs, professionals and the audience, to exchange experience and receive feedback on their work and gain recognition.

Communities of practice and informal learning

The participatory turn in the use of digital technologies and the rise of social media have raised much interest in communities of practice that stand for learning as an inherently social process. Although communities of practice are mentioned in many writings on Web 2.0, the usage of the term is very diverse ranging from virtual communities or informal groups that facilitate learning to a conceptual understanding of social construction of meaning. However, all approaches share the common ground viewing learning and construction of meaning as social processes and setting identity in focus.

Jean Lave and Etienne Wenger (1991) proposed a model of situated learning through engagement in 'communities of practice'. According to their argument, communities of practice are everywhere and we are involved in a number of them: at work, at home, at school or in our leisure. The primary focus of their theory is on learning as social participation, whereby participation encompasses 'being active participants in the practices of social communities and constructing identities in relation to these

communities' (Wenger, 1998:4). Situated learning theory suggests that learning takes place in communities of practice through participation and interaction between community members who jointly share and develop practices, learn from their interactions with group members and gain opportunities to develop personally, professionally and/or intellectually (Lave & Wenger, 1991).

Wenger defines communities of practice as 'groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly' (Wenger, 2006). He argues, that not every community is a community of practice. To distinguish the latter, he defines three key characteristics: the domain, the community and the practice. A shared domain of interest defines the identity of the group. Membership of the community implies commitment to the domain, shared competence and learning from other members. Community enables engaging in joint activities around the domain, communication, collaboration and learning from peers. Members of a community are practitioners who 'develop a shared repertoire of resources': experiences, artifacts, narratives, ways of addressing recurring problems or, in short, a shared practice.

For Wenger (1998), the activities do not occur in isolation, but are embedded within a social context and a multiplicity of relationships within a community and between different communities. The individual learner is defined by and defines these relationships within the community. Therefore, learning, identity and participation in a community of practice are mutually dependent.

Wenger points out that communities of practice come in a variety of forms: small and large, with different hierarchies and core structures, local and global, physical and virtual, formal and informal. They are never defined precisely or have socially visible boundaries (Wenger, 1998). It is not a homogenous group or 'primordial culture sharing entity' (Wenger, 1998). Members can have different interests and backgrounds, different skills and knowledge and 'mutually defining identities' whereas conventional communities tend to imply sameness. For Wenger, communities of practice have a purpose, whereas conventional communities are usually unpurposeful. They are dynamic and evolve over time driven by a creative force. They participate in an activity system 'about which participants share understandings concerning what they are doing and what that means for their lives and for their communities'. (Wenger, 1998).

Lave and Wenger (1991) developed a new approach to learning, placing it in social relationships of co-participation. They illustrate their theory by observations of different communities (Yucatec midwives, Vai and Gola tailors, US Navy quartermasters, meat-cutters, and non-drinking alcoholics in Alcoholics Anonymous). Initially, people join a community and 'learn at the periphery'. With their growing competence they become more involved in core processes within a community, moving from peripheral participation into 'full participation' (1991:37). Thus, they see learning merely as a process of social participation with acquisition of knowledge as an integral part of this process.

Learners inevitably participate in communities of practitioners and... the mastery of knowledge and skill requires newcomers to move toward full participation in the socio-cultural practices of a community. "Legitimate peripheral participation" provides a way to speak about the relations between newcomers and old-timers, and about activities, identities, artefacts, and communities of knowledge and practice. A person's intentions to learn are engaged and the meaning of learning is configured through the process of becoming a full participant in a socio-cultural practice. This social process, includes, indeed it subsumes, the learning of knowledgeable skills (Lave and Wenger, 1991: 29).

Situated learning theory goes beyond learning-by-doing as 'learning as increasing participation in communities of practice concerns the whole person acting in the world' (Lave and Wenger 1991: 49). The concept involves people being full participants in the world and in generating meaning (Tennant, 1997:73). This theory was developed in the pre-Internet era and it is worth examining how far it applies to digital technology-driven structures of participation.

Communities of practice in Web environments

The growing ubiquity of digital technologies and the Internet set new questions about the concept of communities of practice developed in the early '90ies. Today, due to the on-going digitization and development of virtual communications, understanding of the term

'community' moves from local to global, from face-to-face to online. On behalf on the US Federal Government's Council of CIOs, in 2000 Etienne Wenger conducted a study of the technologies designed to support communities of practice. His report encompasses digital tools designed to support communities of practice as well as tools developed for other purposes such as collaboration, instruction, communication and file storage that communities of practice have adopted (Wenger et al., 2005:1). He explored the use of those tools by spatially dispersed communities and by those who meet 'face-to-face'. In his report he writes, that 'communities reach out across much greater distances than ever before. Participation is richer and can be more meaningful despite limited "face time"' (2005:1).

Wenger et al. point out, that 'one critical role of technology then is to provide new resources for making togetherness more continuous in spite of separation in time and space' through the 'breeds of interfaces and devices that bring the experience of community to the individual' (2005:2). For Wenger, technology is complementary to community if properly designed and used. Individuals use the technology to connect to community and they experience the community through their experience of the technology. Therefore, he argues, 'technology can heighten the individual character of the experience of community' (2005:2). However, especially for virtual communities, technology can become a hindrance to participation. Limited access to digital technology and the Internet, lack of skills to use the technology as well as physical disabilities often stand in the way to a successful participation in online communities. Diversity of members can also cause cultural and linguistic barriers for interaction with other users. In some cases, non-native speakers may not want to participate in discussions.

Nevertheless, digital technologies and the Internet brought many advantages to existing communities as well as enabling new ways of community building. There is a need to distinguish between communities of practice that use digital technology and virtual communities of practice. Many communities of practice have a website that serves as an online presence that communicates the community's aims and activities to the wider audience. Some websites also provide tools for community members to communicate, to upload their own work and participate in discussions. However, setting-up and maintaining such websites is time-consuming and requires a dedicated budget. Therefore, as many voluntary communities of practice have insufficient means for a

personal web service, they have to use existing tools and create sub-groups in global communities and social networks.

Compared with conventional communities, online communities differ in several aspects. For Johnson (2001), their primary identification is the purpose, idea or task, rather than a particular place. They evolve according to an arising need and their boundaries are fluid. The lower dominance of norms and traditions than in conventional communities allows for greater individual control (Johnson, 2001). The very nature of Web 2.0 technology enables individual customisation and the building of personal galleries, collections and social networks within the global community. In virtual communities, members have a choice of how to participate. Novices may require time to learn the norms of the community and study the work uploaded by the more experienced. By gaining understanding and expertise, new members may start to participate in discussions, write comments on others' work and finally, upload their own work. Like in conventional communities, in online communities of practice learning takes place through observation, communication and participation. On the one hand, the hidden real identity of users may be disadvantageous for creating a rapport. On the other hand, there may be less fear of judgment and criticism, which can motivate newcomers to participate and present their own work to the community. As in conventional communities, learning can take place through direct mentorship and through participation. Among important advantages of digital technology are the searchable databases, where knowledge and existing discussions can be stored and accessed any time. This enables self-directed non-linear learning from a community's available resources.

In his study on multilingualism, Barton (2013) examined the 365 project on Flickr that is devoted to an activity where someone undertakes to take a photo a day for a year and put each one up on Flickr. There are many groups devoted to 365 activities: topic-specific, self-portraits, reportages and others. This particular practice is 'dependent on a chain of new technologies available for the easy production and circulation of images' that started on Flickr and has spread to other sites, such as Tumblr. In examining personal sites and profiles on Flickr, Barton (2013) found many references to learning. He mentions different sorts of learning: learning how to use Flickr to participate in various activities and to present the member's own work, drawing on earlier experiences

and applying them to new contexts. People were learning about photography in general and about themselves and their lives. Although participants were not asked about learning, it was mentioned by many of them. Barton cites one participant, named Jumx:

I'm grateful to the 365 project for the many things it has taught me – how to get in front of the camera, for one! ...I've learned more about portrait photography, lighting, creative use of timers, about myself – my body, my face, my life. Looking back, it's a wonderful chronicle of a year (Jumx in Barton, 2013).

In line with Wenger, Barton (2013) concludes, that much of learning takes place informally through taking up new opportunities on Flickr and through active participation. Some of his participants use Flickr as community of practice to learn about photography. Others are motivated through the process of 'discovering new purposes for using Flickr over time'. Barton (2013) found, after using Flickr, writing practices of members also change as 'their perceived purposes of Flickr change'. He sees learning as participation whereby people participate in a broader range of practices and their participation experience changes through these practices.

Barton (2013) argues that, as the key feature of Web 2.0 activity is user-generated content, learning is embedded in the process of using the Internet. Therefore, he sees the boundaries between use and learning blurring. Using virtual environments requires skills that need to be learned. This encompasses not only the technical skills necessary for using the tools, but abilities to participate in non-linear discussions and forums, skills for collaboration, information management and search and interaction with other users that we do not meet physically. Thus, it takes time for new users to become familiar with the technology and the tools before they can engage actively with it.

Despite some limitations discussed above, online communities of practice that fulfil the requirements defined by Wenger (2006) - the domain, the community and the practice - provide opportunities for learning through participation. Through participating in communities, members gain knowledge and experience from the resources of the community and from other members, they learn through observation and through active engagement. Besides acquisition of the domain-relevant skills through participation that may be seen as a primary aim, secondary learning takes place: how to use the

technology and particular tools, how to deal with different formats of digital data, how to organise and manage data as well as the acquisition of skills of communication and collaboration with other users. Such communities usually attract people of different levels of expertise and background who have a vital interest in the domain or the purpose of the community. As described above, FLOSS is a good example of an online community of practice with many sub-groups dedicated to specific projects. Besides, there are a lot of online communities of practice in different areas such as photography, art, science, crafting and many others. Participation in such communities has the advantage of enabling people to connect to others who share one's interests. The global dimension of online communities allows members to accumulate knowledge from different geographically-dispersed sources and to make it available to others. Many communities offer their learning resources for free to a wider audience. Especially for those with restricted access to conventional communities (due to their geographical location, the domain or other reasons), online communities of practice offer valuable resources for learning, communication, collaboration, gaining mastery in the domain and presenting their own work to others.

FLOSS and Flickr as examples of online communities of practice

The Free Software Foundation (FSF) of Cambridge, Massachusetts was founded in 1985 as a response to overwhelming control and pressure of copyright regulations. The foundation gave life to a project, the GNU operating system, which might be accepted as 'the backbone of the free programming community' (Söderberg, 2002:14). As Stallman (1999) clarifies, the GNU system is composed of the programs developed by other people for their own purposes. They can be used because they were developed as free software. Today, GNU signifies the name of the campaign for freedom. As Stallman noted, 'If you want to accomplish something in the world, idealism is not enough you need to choose a method that works to achieve the goal. In other words, you need to be "pragmatic"' (Stallman, 2003). The greatest innovation of the Free Software Foundation is the General Public License (GPL), also known as Copyleft. As stated by Stallman (1999), Copyleft is used as a distribution method in order to protect developed software or any part of that software from being turned into proprietary software. It intends to

guarantee the users' freedom to run, copy, distribute, study, change and improve the software program.

The Free Software Movement has been a revolutionary force supporting open access to knowledge and intellectual property. However, its rather idealistic philosophy set certain limitations to further development. A more innovative approach has been suggested by the open source movement, which, although based on free software, encourages more opportunities for innovation.

The ground-breaking innovation of the open source movement is based on collaboration. In 1991, a Finnish student - Linus Torvald - released onto the Internet a new computer operating system kernel that he had written. He published the source code as well asking others for feedback and ideas. This caused a wave of excitement among computer professionals and many of them contributed to the new 'open' project helping to make it a fully-functional and free operating system - Linux. Torvald first published the Linux kernel under its own licence, which had a restriction on commercial activity. However, as the software to use with the kernel was mainly licensed under the GNU General Public License (GPL), Torvald suggested in 1992 releasing the kernel under the same license. The GPL license allows distribution and sale of possibly modified and unmodified versions of Linux but requires that all those copies be released under the same license and be accompanied by the complete corresponding source code. This condition accelerates the error correction and development processes accounting for the rapid progress of open source software tools.

Nowadays, there are hundreds of companies, organisations and individuals that have released their own versions of operating systems based on the Linux kernel. They serve different purposes; therefore some distributions are sold whilst others are available for free. The free distribution, adaptability, modularity and functionality of Linux made it the main alternative for proprietary Microsoft and Unix-based operating systems. Linux has been adopted primarily as a server platform, but it is also increasingly used in other electronic devices. Thus, it has dominated the netbook market since it was the default operating system on the Eee PCs that first became available in 2007.

Since Open Source Software and Free Software are closely related, they are often referred to by the acronym FOSS or FLOSS (Free (Libre) Open Source Software). FLOSS is developed collaboratively by many volunteers who work either individually or

in groups throughout the world. Large projects are developed by teams in corresponding online communities; whereby the tasks are not assigned to individual members but each contributor chooses what to work on. Depending on a project, contributors may be of different levels of expertise, ranging from professionals, skilled amateurs, hobby programmers and interested users. Depending on their skills, FLOSS volunteers write the code, do 'parallel debugging', which is a kind of peer review, and test the product for possible bugs and usability issues.

For Andreatos (2009), who studied informal learning in FLOSS communities in Greece, motivations to join FLOSS communities are: cultivation of personal interests and connections to other people with similar interests; improvement of a product of interest; for the joy of it, which has the practical advantage of socialization. Learning from peers is a significant motivational factor as 'new developers are initially assigned a mentor who supervises their work and approves the changes they make to the code' (Andreatos, 2009:49). Novices entering a FLOSS community are expected to get acquainted with the norms, values and regulations of the community before they can start contributing. Thus, through participation and voluntary contribution, community members benefit from peer support, informal learning environments, experience exchange and social connections to similar-minded people.

The advances in all large free software and open source projects rely on collaboration and contribution by the community. Usually, a project is maintained by a core group of developers that tests and integrates their work and that of others into the main program. The openness of the system offers a field for experimentation that often brings innovative new features into the tool. Nobody has the talent to do the whole work alone. The joint creativity, combination of talents, ideas and expertise form the main drive for innovation in the free software and open source domain.

Open Source is software that nobody owns, everyone can use and anyone can improve, and open-source licensing is a way to hold ideas and information in common that under the right conditions can encourage mass collaborative innovation (Leadbeater, 2009:65).

With the development of Free Software and the Open Source community, the tools that are available under free licenses are becoming popular among the broader public. For example, nowadays hardly any computer user is not acquainted with the popular Open Source browser Mozilla Firefox. Efforts such as the grassroots “Spread Firefox” marketing group seem to have been very effective at convincing people to try out the application. This began with the setting of the absurdly ambitious goal of a million downloads within 10 days of release in November 2004; they reached that in only 4 days, and had 10 million downloads within 30 days. In only a year, Firefox was being downloaded an average of 250,000 times per day.

One of the successful free software projects is the GIMP – a powerful image manipulation program - that has been used in the empirical study described in Chapter 6. Since 1995, it has been in a constant state of development with numerous updates, extensions and tutorials being uploaded daily by the members of the GIMP community. In its functionality, the GIMP resembles Adobe Photoshop, the proprietary image editor, which is expensive and hardly affordable for an ordinary user. The GIMP is a free alternative which is made more valuable through its community of committed users and developers who offer help and peer-support.

All of the FLOSS tools are freely available on the Internet and can be instantly downloaded at any time. However, the FLOSS community provides valuable resources for the developing world where broadband Internet is not available. The ‘Freedom Toaster’ project (freedomtoaster.org), run by Breadbin Interactive is one of the few initiatives aiming to bring the benefits of free and open source software to developing countries. Freedom Toasters are self-contained ‘Bring ‘n Burn’ facilities that are preloaded to dispense free digital products, including software, photography, music and literature. The project relies on volunteers who maintain over thirty ‘toasters’ spread across Southern Africa, India and Ethiopia.

Gacek et al. (2004:7) made a very good point that ‘developers are always users’. They respond to the needs of the user community trying collaboratively to fill the existing gaps and to develop new tools that make our life easier and extend the possibilities of computer technology. Besides the development of innovative software, FLOSS communities provide learning environments and support as well as cultivating the ideology of voluntarism, collaboration and solidarity.

Jean Burgess recognised the significance of emergent cultural practices that social media brings with it in relation to 'ordinary' people's creative production. In her doctoral thesis on vernacular creativity, she conducted a case study of the Flickr network (2007). She conceptualises Flickr not as a mere technological innovation applied to a photo-sharing service but as a social destination and a site of cultural practice. She cites Stewart Butterfield - chief executive officer of the company that developed Flickr - who sees Flickr as the means for connecting everyday vernacular photography with the networked public sphere. In his announcement of the services to be 'the eyes of the world' he writes:

That can manifest itself as art, or using photos as a means of keeping in touch with friends and family, "personal publishing" or intimate, small group sharing. It includes "memory preservation" (the de facto understanding of what drives the photo industry), but it also includes the ephemera that keep people related to each other: do you like my new haircut? Should I buy these shoes? Holy smoke - look what I saw on the way to work! It lets you know who's gone where with whom, what the vacation was like, how much the baby grew today, all as it's happening. And most dramatically, Flickr gives you a window into things that you might otherwise never see, from the perspective of people that you might otherwise never encounter (Butterfield, 2006).

Burgess describes Flickr as an interactive environment that offers new modes of participation that promote exploratory and playful forms of engagement. 'As with games, users gain more rewards' the more they explore the new opportunities of a creative engagement – 'joining groups, participating in group discussions, undertaking photographic "challenges" developed within groups (as in, for example, the many groups who organise photographic "treasure hunts"', or attending offline meet-ups' (Burgess, 2007:140-141). During her two and a half year study of Flickr participants online and in 'real life', Burgess found out, that 'the participants' narratives of "becoming photographers" reveal complex relationships among the knowledgeable consumption of technologies, learning the techniques and aesthetics of "good photography", and participating in communities of practice, both online and off' (Burgess, 2007:157). It has

also been revealed that those amateur photographers are also becoming increasingly ready to invest in more professional photographic equipment, as well as software, to achieve better results. However, some of her interviewees used rather 'primitive' devices but instead developed their personal, highly-creative approach to photography. In a recurring pattern, the study participants tell their stories of the progress from beginner to an advanced 'professional amateur' level seeing the success in the correlation of new digital SLR cameras with computer and Internet participation. 'Like their recollections of "learning computer", their stories about learning photography were characterised by stories of playful and ongoing exploration, experimentation and discovery, articulated to ongoing technological knowledge and consumption' (Burgess, 2007:161). Participants refer to Flickr as a learning, teaching and exhibition space rather than just a social network. Many of them, who never thought of themselves as creative individuals, reported the discovery and development of their personal creativity through digital photography and the exchange of experience with other users.

Jean Burgess (2007) used the term 'vernacular creativity' to define the engagement of 'ordinary' people with everyday cultural production. In her work, she distinguishes 'vernacular' from the 'exceptional', 'high', or 'proper' creativity. Burgess defines 'vernacular creativity' as 'cultural practice outside the symbolic boundaries of official art worlds' and emphasises the 'ordinary' nature of this concept. In her doctoral dissertation, Burgess investigates the emerging structures of cultural participation based around vernacular creativity and new-media forms that lead to 'cultural citizenship' as a new dimension of a democratic society. She writes:

I suggested that if 'ordinary' vernacular creativity does have the potential to contribute to public culture, then its emergent forms and practices must also have implications for cultural citizenship, where cultural citizenship is understood as the practice of active participation in the cultural public sphere (Burgess, 2007:250).

To test her hypothesis, Burgess (2007) conducted case studies of the Flickr community and Digital Storytelling projects. She points out that remediation of vernacular creativity begins when individual work is uploaded or shared, 'transforming from one-to-one private forms of communication to public vernacular culture'. For Burgess, both Flickr

and Digital Storytelling are, among other things, 'spaces in which individuals can represent their identities and their perspectives on the world, engage with the self-representation of others, collaborate to produce significant contributions to public culture and encounter cultural difference' (Burgess, 2007:253).

In recent years there has been a rising interest in communities of practice as spaces for knowledge-generation and learning-in-action through situated practice. Amin and Roberts (2008), through study of the available literature and research on this topic, found that the use of the term has become imprecise, straying back from the original focus of tight communities of face-to-face interaction with focus identity formation and negotiation of meaning as central to learning. Instead, as they argue, the term is used for all sorts of collaborative settings and communities. Amin and Roberts saw the urge to differentiate between different arts of knowing in action in terms of knowledge processes, organisation, spatial dynamics and innovation outcomes. They outlined four modes of knowing in action: craft or task-based knowing; professional knowing; epistemic or high creativity knowing; and virtual knowing (Amin and Roberts, 2008).

The four community types proposed by Amin and Roberts (2008) have different aims and durations; they are based on different types of knowledge and produce different outcomes. For instance, craft/task activities are primarily concerned with the preservation and development of existing knowledge rather than radical innovation. Nevertheless, through dynamic processes of participation by members, significant innovations are possible in response to the changing environment, tools and requirements of community members and the audience (Amin and Roberts, 2008:359). Professional knowing is distinguished through the presence of professional standards in communities where 'newcomers move from legitimate peripheral participation towards full participation, shaping knowledge, developing their professional identities and participating in incremental innovative activity as they learn' (Amin and Roberts, 2008:360). However, as Amin and Roberts argue, once novices gain a certain level of mastery, they benefit from virtual communities of practice that join geographically-dispersed members of their profession. Amin and Roberts (2008:361) describe epistemic communities as, 'purposefully organised to unleash creative energy around specific exploratory projects' and typically involving coalitions of experts from a variety of

disciplines. The key difference of such communities is the generation of new knowledge through, fusing elements not connected before'. Thus, creativity thrives on variety.

Although virtual knowing is closely connected to the three previous types of communities, Amin and Roberts (2008) view it as a separate type of knowledge-generation through participation and social action that takes place only in online space.

They distinguish two types of online interaction as spaces of situated knowing: the innovation-seeking projects that involve a large number of participants and the relatively closed interest groups that face specific problems and are organised as knowledge communities. FLOSS development is a good example of such communities where participants interact and collaborate virtually, usually never meeting each other face-to-face. To the second type of online communities belong various initiatives that have the primary aim to advance knowledge. According to Hall and Graham (2004), closed groups with clear purposes and rules of engagement are more likely to generate new knowledge than open access communities. Nevertheless, innovation in open communities may take a slow pace, but global dimensions as these communities are usually large-scale involving large numbers of participants and contributors.

Knowledge generation and innovation are not the only reasons for participating in communities of practice. Wasko and Faraj (2000) in their study of three Usenet technical communities found that people collaborate not only in expectation of tangible returns or outcomes, but also for other merely social reasons such as meeting the similar-minded, learning from others, helping each other, having the feeling of belonging to a community and maintaining a certain 'craft standard'.

In summary, virtual knowing seems to work best when technological and human intermediaries are available to help cultivate a 'net' sociality building on purposefulness, social interaction and affective commitment. The successful examples reveal that online communities can replicate a rich texture of social interaction normally associated with communities of practice marked by high levels of inter-personal trust and reciprocity or collaborations built around strong professional and/or project ties. But, it is a very different kind of sociality, building on affective commitment at a distance. These secondary benefits of participation explain volunteer contribution to collaborative projects, experience- and knowledge-sharing and making knowledge available online without expectation of monetary benefits.

Amin and Roberts (2008:364) sum up their research into virtual communities of practice:

In summary, virtual knowing seems to work best when technological and human intermediaries are available to help cultivate a 'net' sociality building on purposefulness, social interaction, and affective commitment. The successful examples reveal that online communities can replicate a rich texture of social interaction normally associated with communities of practice marked by high levels of inter-personal trust and reciprocity or collaborations built around strong professional and/or project ties.

Virtual communities of practice can help to nurture everyday creative activities, to motivate people to present their work to other similar-minded individuals and to learn through participation and active engagement. In this sense, communities can function as a supportive environment with parallels to Becker's (1982) Art Worlds that provide knowledge databases, tools, help, mentorship, peer-support and the audience that help an individual to engage with creative activity and gain mastery through participation. Social ties, sense of belonging and recognition are important motivational aspects for engaging with creative practice and self-actualisation. The use of digital technologies 'helped to redefine the nature, organisation and identity of communities' (Bitton et al., 2011:2). ICT facilitated sharing of human experience and accumulation of knowledge, bringing the opportunity for people to belong to various social groups and communities according to their interests and not their geographical location. As Bitton et al. (2011) write, 'the sense of social bonding and solidarity can arise from the use of digital technologies by communitarians, the key aspects of community that can be an instrument for collective action and social progress'.

Chapter 4: Amateur Photography in the Digital Age

Chapter overview

This chapter introduces a brief history of consumer photography with the focus on the role of technology in the process of on-going amateurisation of photographic practices. The Kodak culture and the birth of digital technologies and the Internet are discussed as radical innovations that brought the means to produce, process, print and distribute photographic images to the masses. The second part of the chapter is concerned with image processing and manipulation which is considered to be an integral part of photographic practice.

Taking photographs, looking at them, and talking about them are activities so common in our lives that they almost escape our notice.

(Sarvas & Frohlich, 2011:1)

There is hardly a person in the developed world that does not take pictures occasionally or on a regular basis. Today, more people than ever before carry with them a piece of technology capable of taking pictures, e.g. cell-or smartphones. Digital cameras are also available in almost any size and price category. Terabytes of snapshots fill social networks and blogs. . KPCB analyst Mary Meeker's annual Internet Trends report states that all internet-connected citizens share over 1.8 billion photos each day multi-platform through services such as Snapchat, Instagram, Facebook and WhatsApp and these figures are growing exponentially (Meeker, 2014:62). Those captured moments of current activity, location or events are shared instantly with friends and family. Photographic images build an important part of modern communication. Since the invention of consumer cameras, ordinary or personal photography is 'both a leisure pursuit and an increasingly flexible medium for the construction of ordinary people's accounts of their lives and fantasies' (Holland, 1997: 196). From the very beginning, this type of photography that lies outside of professional practice is changing constantly pushed by emerging technological developments. The most affected, however, is not the

photographic equipment, but the way photographs are produced, used and disseminated.

Consumer photography: a historical overview

The very first consumer cameras were sold from the late 1880s. In 1888 G. Eastman registered the Kodak name and launched the first roll film camera that was successful but very expensive and not affordable for the majority of the population. Two years later, Kodak brought out a cheaper, easy-to-use model made of wood and cardboard that was sold for 1 US Dollar. With a marketing slogan “You press the button, we do the rest” and by providing corresponding services, Kodak made photography accessible to almost everyone.

Since then, non-professional photography has become a mass phenomenon that was described in research as domestic, family or snapshot photography. Sarvas & Frohlich (2011:5) use the term ‘domestic photography’ to describe the photographic activities of ordinary people taking and using images for non-professional purposes. These activities usually take place in informal settings at home. Family photography, similar to domestic, is a more narrow term referring to photographic activities within a family: family members are those who are photographed and who do the photographing.

Another term associated with consumer photography is ‘snapshot’ photography. ‘The term ‘snapshots’ originates from hunting terminology meaning ‘shooting without aiming’. The first consumer cameras did not have a viewfinder and photographs were ‘shot’ without much aiming. The word ‘snap’ is associated with the simplicity of consumer photography that involves pointing, squeezing a button and the shutter ‘snaps’. Accordingly, ‘a snapshot photographer (i.e. a snapshotter) is a person who takes photographs with consumer cameras, and snapshots are the photographs created in the process’ (Sarvas and Frohlich, 2011:6). The value of snapshot photographs is not in their aesthetics but merely in their emotional connection to the photographer. Snapshots are usually taken ‘to preserve memories of noticeable events, to share the current present of ourselves, our surroundings that inspire us to family, friends and [a] wider audience’ (Sarvas and Frohlich, 2011:8). Usually not interesting for the public, snapshots are valued in the family circle, among friends and relatives as tokens for

social bonding, images that trigger emotions, preserve memories and shape a positive image of ourselves (Sarvas and Frohlich, 2011:8). Snapshot photography has become possible with the emergence and growing ubiquity of affordable, easy-to-use, consumer cameras and film development services.

Since the introduction of the first consumer cameras, non-professional photography has changed rapidly being pushed by technological developments and emerging social communication channels and norms. In their work on the history of domestic photography, Sarvas and Frohlich (2011) identify three main consecutive paths: the Portrait Path (ca. 1830s–1888), the Kodak Path (ca. 1888– 1990s), and the Digital Path (starting in the 1990s). Each of these paths is an evolutionary step in domestic photography characterised by technological innovation that ‘disrupted the existing status quo of technologies, businesses, and practices’ (p.2).

The technical invention of photography in the first half of 19th century started an era of mass production of photographs and created a business of photo printing and retailing (Sarvas and Frohlich, 2011:43). Introduction of the small-size ‘carte-de-visite’ format for portrait photography (63x100mm) made it accessible for a large part of the population. Portraits were collected in family albums and given to friends and relatives to preserve memories and as ‘tokens of friendship and affection, self-presentation, and demonstration of memberships within their culture’ (Sarvas and Frohlich, 2011:44). This transition from portraits to mass-produced portraits is known as the ‘Portrait Path’ and is an important step in the evolution of domestic photography.

A revolutionary idea of George Eastman was to make photographing so easy that anyone would be able to create photographs. The invention of a Kodak consumer camera in 1888 and, more important, the Kodak photo-finishing service, gave birth to snapshot photography. Taking pictures became a popular leisure activity for ordinary people. Kodak with its business model and infrastructure, succeeded in shaping and building people’s photographic practices so that they were based on its technology (Sarvas and Frohlich, 2011:58). By addressing women in their marketing campaigns, Kodak brought the snapshot culture into the home and gave the mother of the family the role of the ‘curator of the family album’ (Sarvas and Frohlich, 2011:58). Another innovation made by Kodak was the promotion of storytelling as the form of reading and viewing the snapshots. The message ‘Kodak keeps the story’ superseded written text

and suggested talking 'action snapshots' in natural settings as opposed to the traditional form of family album with posed studio portraits complemented with textual description. The successful model of Kodak consumer photography remained for almost a century. Simple and affordable technology in conjunction with a well-conceived advertisement found resonance with people's natural desire to capture and preserve important moments in their lives and to share them with others. In the first year after the release, 13,000 Kodak cameras were sold (Sarvas and Frohlich, 2011:80) – consumer behaviour that shaped the snapshot culture that remains today. The process of taking photographic images had not changed much since its invention. The recording medium, however, was the one that was experimented with the most and that changed over time: metal and glass plates, celluloid film and on to the digital CCD sensor that we use it today in digital cameras.

Photography goes digital

In contrast to analogue photography with its closed infrastructure, 'the history of digital photography is one of increasing assimilation into a general-purpose, networked, computing infrastructure' (Sarvas and Frohlich, 2011:84). In the early 1990ies, a vast expansion of information and communication technology initiated a wave of digitization pushing manufacturers to catch up with the new era. Colour flatbed scanners that were part of the usual computer infrastructure or special photo scanners made it possible to digitise prints and negatives to process them on personal computers.

In 1990, two models of fully digital consumer cameras were brought onto the market. They were very expensive, of low resolution and limited memory. It took years for the prices for digital cameras to drop to a level affordable for an average consumer.

Another innovation during the same year was the release of the first version of photo and image-editing software Adobe Photoshop that enabled the manipulation of digital images. The first image-editing tools were designed for professionals. However, a growing number of ordinary people owned digital cameras, home PCs, photo scanners and printers. The 'home labs' gave snapshooters more control over the development process. Therefore, image-editing tools were necessary for the optimisation of digital images for viewing on screen or printing. Digital photography combined with personal

computer and processing software opened up new horizons for creativity and experimentation that attracted many. It has become possible to take many pictures at a time and to view the photographs on the display of a digital camera immediately after shooting at no additional cost. The opportunity to view and delete images motivated non-professionals to experiment with the camera settings to achieve better results. Image editing capabilities changed people's perception of photography redefining its representational nature. As Batchen (1994:48) writes, 'digitization abandons even the rhetoric of truth that has been an important part of photography's cultural success'. In analogue photography there were always attempts at image manipulation. However, this was a difficult process that required advanced knowledge of photography and film development. Computer technology, digital cameras and editing software made image editing widely accessible. Although still heavily criticised, image manipulation is an inseparable part of digital photography. Digital alteration techniques enabled by the digital technology and computers are another tool at the photographer's disposal that helps him or her to achieve the desired effect.

Saying, "the camera never lies" is as foolish as asserting that the computer always does. Just because words can be fictional does not require the outlawing of news articles; similarly with photographs. The initial clarification that is needed is the separation of one kind of communication from the other, properly labelled (Ritchin, 1990:143).

Acknowledging image manipulation as an integral part of digital photography would help photographs to be viewed with a dose of healthy scepticism keeping in mind that pictures can tell the truth or be as easily altered as spoken words or written text. Today, the majority of the population seems to be aware of the manipulative nature of digital photography. However, the extent to which the wider audience's perception is critical or naïve has not yet been thoroughly researched.

Storage, dissemination and exhibition of digital photography

Information technology and the Internet made it possible to send digital data to others via e-mail or to publish it online. The invention of small-sized, affordable, portrait photography in the 19th century made it possible for ordinary people to give their photographs to friends and relatives and to create photo collections or albums. Similarly, the digital era enabled the next major step in photo sharing. Digital images can be sent immediately to anyone connected to the Internet. For about a decade, we experienced a boom in online photo publishing and sharing. The easier the technology becomes, the more people are using it. As early online publishing in the 1990ies required special knowledge, e-mail was the most popular way of sending digital images to other people. However, with the growing resolution of digital cameras, the size of photographs became bigger than most e-mail providers allowed. E-mail was not a very convenient way to share and discuss photographs due to its restricted size and possibilities to communicate with a group of people. There was a demand for alternative solutions. Snapfish and Shutterfly were among the first web-based photo-sharing and printing services launched in 1999-2000 that allowed their users to publish their photographs online for free. The invention of the camera 'phone was another major technological development that pushed forward the development of online photo storage, sharing and printing services. In 2002, Nokia released the Nokia 7650, the first cell phone containing a digital camera, which sold for US\$ 600 (Gustavson, 2009). The falling prizes and the rising popularity of camera-phones resulted in a tremendous number of digital pictures being uploaded online. This trend pushed the providers to optimize their services and to extend their websites' capabilities.

Flickr, launched in 2004, began a new trend for the online photo community by combining several services in one. Although plenty of online photo-sharing websites existed at the time, 'Flickr was the first to incorporate the dynamics of social networks - allowing users to tag each other's photos and follow one another. It also had a sense of playfulness, greeting users in a different language every time they logged in and keeping its community standards casual and largely legalese-free' (Leonard, 2010). Flickr offers free and paid 'Pro' accounts offering different sets of tools to tag and to comment on other people's photographs, to create groups based on different events and

themes, to embed the user's own and other people's images in a blog or automatically send camera shots to a blog. Flickr's innovation became a great success among amateur and professional photographers as well as bloggers and citizen journalists. In 2014, ten years after its start, Flickr counted 92 million users¹⁵ with over half of a billion photos uploaded each year (in the last three years)¹⁶. The modern Flickr encompasses a set of tools that allows users to tag other users in one's photos, to create galleries from one's own and other users' photographs based on themes, to add geotags and create maps, to edit images with a cloud-based tool [Aviary] and to choose the type of licence for the photos posted. Flickr also allows posting photos to other social networks and blogs making it one of the most popular online platforms among hobbyists and amateur and professional photographers.

The popular social network Facebook, also launched in 2004, added its photo application a year later. The photo feature that became one of the most popular services of Facebook allowed users to create and share photo albums, to tag their friends in the pictures and to decide who could view their photographs. Today, there are 1.3 billion active users who upload about 300 million photos daily¹⁷. There are plenty of social platforms and online services that allow the uploading, sharing, storage and exchange of photographs. With the increased multifunctionality and connectivity of digital devices, photographs are increasingly used to report in real time about our actions, the places we visit or the things we find interesting and worth sharing. This set a trend for disposable snapshot photography. Snapchat is one of the recent software developments for mobile devices that allows the user to send a photograph to selected people on his or her contact list and set a timer (from 1 to 10 seconds) for how long recipients can view the 'Snap' after which the image will be destroyed. The idea has proved to be successful and, according to Snapchat's statistics, its users send up to 700 million photographs each day (Snapchat.com, 2014).

¹⁵ <http://expandedramblings.com/index.php/business-directory/19751/flickr/> Accessed November 2014

¹⁶ <https://www.flickr.com/photos/franckmichel/6855169886/> Accessed November 2014

¹⁷ <http://gizmodo.com/5937143/what-facebook-deals-with-everyday-27-billion-likes-300-million-photos-uploaded-and-500-terabytes-of-data>. Accessed November 2014

This brief overview of the history of digital photography makes clear the transition from professional to mass, from exceptional to ordinary, from beautiful to funny and interesting, from there and then to here and now, from valuable to disposable and from personal to public.

From family albums to social media.

For more than a century, photography has been deeply embedded in our social life being used for different purposes: as domestic snapshots to preserve memories, as an artistic medium or business or a means of self-presentation. From the technological side, as already mentioned above, the camera itself did not change much after its invention. What did change is the recording medium: from silver plates to roll film and, finally, to digital CCD sensors. The social role of personal photography, however, is noticeably changing over time. Early photography was mainly used to capture memories for future reference and to construct a positive image of a person or family. Old photographs usually represent dressed-up people posing for a camera with unnatural faces in formal studio settings.

In contrast, today, when almost everybody is equipped with a digital camera and Internet connection, an informal self-presentation or snap shooting of close family members and friends is the most popular form of personal photography.

Slater (1995) described two significant developments of personal photography caused by the digitisation and ubiquity of communication and information technology. First is the changing role of images that take place in everyday life: from 'there' and 'then' to 'here' and 'now'. They are 'a form of communication rather than a reflective representation' (Slater, 1995:138–139). Similarly, VanDijck (2008:60) writes about cameras that increasingly serve as 'tools for mediating everyday experiences other than rituals or ceremonial moments'. If earlier generations viewed photography merely as a memory tool, today's young people use pictures as a part of communication and social networking. According to Kindberg et al. (2005), youngsters prefer sharing photos as experiences rather than material objects.

Second, is the significant shift from family representation to self-presentation. Photographs are less used for capturing memories to be viewed in the future but more as illustrations of the present to be viewed immediately or soon.

Self-presentation – rather than family representation – is now a major function of photographs. A significant shift from personal photography being bound up with memory and commemoration towards pictures as a form of identity formation; cameras are used less for the remembrance of family life and more for the affirmation of personhood and personal bonds (Harrison, B. 2002:107. Narrative Inquiry).

Sharing emotions with other people is a natural need of human beings. Today, smartphones make it possible to capture images and share them immediately over messengers or social networks with friends and relatives. Usually, other people who view the pictures react by writing a comment or reply to the sender. In that way, self-presentation through personal pictures shared through social networks has become a widespread phenomenon. The Oxford English Dictionary recently declared “selfie” as the most prominent term that has been increasingly used since 2013. “Selfie” is defined as ‘a photograph that one has taken of oneself, typically one taken with a smartphone or webcam and uploaded to a social media website’ (Oxford English Dictionary 2013). This acknowledges the trend of self-presentation through personal photography as part of social identity building, a self-made image of oneself that is shared with a circle of friends or a broader audience.

The shift in use and function of the camera seems to suit a more general cultural condition. This cultural condition has definitely affected the nature and status of photographs as building blocks for personal identity. Even if the functions of capturing memory, communicative experience and identity formation continue to coexist in current uses of personal photography, their re-balanced significance reverberates in crucial changes in our contemporary cultural condition. (Van Dijck, 1995)

Digital imaging and the Internet add a new dimension to the tradition of capturing, storing and sharing personal photography. Social networks, online photo communities and messengers make it possible to share photographs with a wide audience around the world. Nevertheless, digital data, due to its immateriality and fluidity, is valued less than material objects. It seems not easy and not ethical to throw away a printed photograph or a family album. In contrast, a digital photograph can be deleted without much consideration. Digital images are often stored on hard drives, CDs, DVDs or online and therefore can be easily lost due to technical failure. Digital photographs require a computer or another device capable of reading and displaying digital data to be viewed. For these reasons, the technological advances of the digital era cannot replace the traditional use of photographs and their value as a visual narrative of their lives and memory for the future. The re-birth of photo-printing services can serve as evidence for a revaluation of photographs as material objects.

Re-birth of printing

A photographic print is both like a 'stencil' and is a physical object itself. Photographs frequently take the form of small things we have and keep, which we can carry with us and look at in the absence of what they depict. Putting photographic indexicality and materiality together we get a powerful mix; we see the photograph as something which it is as important to hold, touch, feel and check for as it is to see, and which we sense has literally touched something that exists but is absent or has existed but is no more (Lister, 1997:330).

With the vast expansion of digital photography and online photo-sharing websites, many started to talk about the “death of print”. Digital photographs are shared and published online and there is no need to print them on paper. In contrast, statistics shows a growing demand for photo printing, whereby online services are more popular than self-service machines in stores. In the USA, according to IBISWorld¹⁸, the online photo

¹⁸ <http://www.youshouldworkhere.com/reports/onlinephotoprinting.pdf>, Accessed October 2013

printing business has been growing constantly since 2003. Research firm InfoTrends did a survey of Internet connected households in EU, and photo printing went up 11% in 2012 compared to 2007-2008. Similarly, U.S.-based online photo printing has become popular, growing by about 20% annually between 2007-2012 according to market research firm IBISWorld. The technological reasons for this growth are: the adoption of digital cameras, the broadband and mobile Internet connections, and easy-to use tools that allow the uploading and ordering of photos online and make decisions for the type of print, size and material without any assistance. The online photo printing offices offer attractively cheap prices and a broad range of services. The personal and social reasons for the re-birth of printing is the fluidity of digital data and people's natural need to preserve and share memories of loved ones and emotional moments in their lives. Printed photographs can last many years and remain readable, as no technology is required but human eyes.

Digital printing today offers far more than the conventional paper prints. Digital images can be printed on almost any surface as textile, canvas, wood, glass and metal. Thus, with prices getting lower each year due to the growing competition in the online printing market, more people try out the new opportunities of printing. Prints that were beyond the reach of ordinary people several years ago have become increasingly ubiquitous: clothes, bags, decorations for home and office interior, self-made photo books, cups and other everyday objects can be personalized with photographs in several clicks of a mouse. According to an IBISworld.com statistic of 2012, 'paper prints' make about the half of the online photo printing market in the U.S., whereby canvas prints (11%), photo books (20%) and other services (21%) are growing in popularity. Most online photo-printing websites have image-editing and publishing tools that allow users to make simple adjustments like crop, rotation and colour-adjustment and to design and order objects. Despite the simplicity and convenience of embedded editing tools, many users seek out more capable tools to achieve better results for their prints.

Similarly, not everyone is satisfied with the image quality of snapshots. Image alteration is a part of digital photography that cannot be ignored.

Photography in the digital age

The emergence of digital technologies in the early 1990ies brought major transformations to traditional photography. The new digital era is sometimes referred to as the 'post-photographic' or 'digital' imaging' period (Lister, 2004). This important evolutionary step is compared with the invention of photography itself (Mitchell, 1992:20) or even with the introduction of pictorial perspective in the Renaissance (Crary, 1993:1). According to Lister (2004:302), 'it was widely sensed that this was a moment of special significance in the history of media and visual representation' welcomed by some photographers as liberation from the limitations of traditional practices and seen by others as a serious threat to photography.

Despite the hype around the digital revolution, digital photography can be described as an evolution of conventional photography. Chemical processes are replaced by numerical and the medium of representation has changed. Nevertheless, the photographic practice itself did not change significantly. Rosen writes about the hybridization of digital and traditional photography by introducing the term 'digital mimicry' - 'the capacity of the digital to imitate such pre-existing compositional forms of imagery' (Rosen, 2001:309). A digital image is meant to appear as a conventional photograph 'according to a certain range of prior pictorial norms identified with photography' (Rosen, 2001:308). Moreover, the 'digital mimicry' is regarded as one of the driving forces of digital photography. For these reasons, Rosen sees the gradual digitization 'without stable points of source and end, old and new' (2001:315) as a transformative process that is deeply grounded in conventional photography. He argues, that 'digital imaging does not introduce a new element into representational cultures and practices, but it causes those cultures and practices to take a radically transformative turn'. (Rosen, 2001:318). However, digital imaging alone would not cause radical transformations, as, apart from the recording medium, it is not very different from the analogue technology. The transformative power that calls into existence new forms of representation and communication lies in digital imaging as a part of the global infrastructure of information and communication technology.

Despite the proximity to conventional photographic practice found in the origins of digital photography, the latter is distinguished through several innovations enabled by

digital technology: encoding, manipulation and simulation. Apart from that, dissemination and convergence are key factors that characterize the use of digital images (Lister, 2004; Rosen, 2001).

Encoding is the ability to represent images in numerical values. An analogue photograph that is fixed in its material form can be turned into numerical data with the use of digital technology. In contrast, a digital image is mutable and can be applied to almost any material surface. Digital cameras capture and store images as rows of numerical values that require specific technology capable of reading and displaying binary code as images.

Digital technology facilitates the introduction of a matrix of tiny manipulable elements at the physical base of the photographic image. This amounts to an 'infection' of the stable analogue photographic image by an intrinsically fluid and malleable digital code. (...) With this code in place the photographic image (...) becomes manipulable to a fine degree (Lister, 2004:299).

The numerical substance of digital images makes them 'infinitely manipulable and the possibilities of picture-making limitless' (Rosen, 2001:307). Therefore, manipulation can be seen as one of the main features of digital imaging.

Manipulation: the fluidity of digital data provides more control and 'more access to the imaging process between the stages of taking the picture and looking at its printed result' (VanDijk, 2008:66). Since digital imaging is detached from physical appearance, it is 'liberated from previously operative constraints of image making' (Rosen, 2001:319) and in that way can be infinitely altered according to the conception of the author.

One of the most important features of digital media is that they can be manipulated with all the resources of a digital computer to create, filter, augment, refine, or alter the information they contain (...) A creative imagination roams through digital domains unencumbered by the constraints of corporeal existence that are a way of life for analogue artists (Binkley, 1993:100).

Digital technology makes it possible to access and manipulate data during several stages from image capture to the final result. The camera preview function used immediately after shooting allows bad pictures to be erased and adjustments to be made that optimize the shots that follow, e.g. framing, light, aperture, or changing the poses of photographed objects. After shooting, photographs are usually viewed on a computer or a mobile device where further selection and editing can take place.

Digital technology did not invent manipulation of pictures but made it accessible to the masses. Today, there is a variety of image-editing tools ranging from the simple and easy-to-use to professional ones. Almost all photo managing and viewing software has a set of tools for simple editing that involves cropping, rotating, colour and contrast adjusting and applying filters that, for instance, can make the image look like an old photograph or a watercolour. Advanced adjustments can be made in Photoshop or alternative programs, some of which are available free of cost, e.g. the GIMP.

Due to the wide accessibility of image editing tools and the simplicity of the process, more people get to use these techniques and more images are being manipulated than ever before. Those manipulations that are part of contemporary photographic practice range from minor adjustments of colour, tone, contrast and exposure to totally artificial pictures that involve the erasing and inserting of objects cut out from other photographs or constructed in a 3D program.

Simulation is defined by Lister (2004:298) as 'the production of images that looked like photographs - generated from data and knowledge - where no human eye, looking through a viewfinder, had directed a lens at an actual object in the physical world, opened a shutter and traced its image'. The newly constructed 'virtual visual spaces' are independent from 'a point of view static, or mobile, located in real space' (Crary, 1993:2).

Most of the historically important functions of the human eye are being supplanted by practices in which visual images no longer have any reference to the position of an observer in a 'real' optically perceived world (Crary, 1993:2).

Computer technology made it possible to produce photorealistic images from pure data. Such images do not involve light-capturing by a camera and are based on the

knowledge or imagination of the creator. Nevertheless, even if such images represent imaginary virtual worlds, the majority of them follow the norms of photographic practice and strive to look as 'real' as possible. This aim to imitate conventional photography approves the strong continuity of photographic codes between the chemical and the digital. With the almost limitless possibilities of 3D technology, the constructed pictures can 'imitate' the 'real' or represent any imaginary concepts or combinations. 3D imaging in its freedom for representation can be compared with painting. However, as its simulated worlds are purely digital, a convergence with other digital media forms such as photography and video is possible. Parts of a digital image can be substituted by artificial constructs, for instance, a boring grey sky of a landscape can be replaced by a 3D-generated blue sky with white clouds. Moreover, 3D imaging is increasingly used in preference to conventional illustration aimed at clarification (e.g. molecular models in biology) or communication of imaginary concepts (e.g. Architecture, industrial design). The ubiquity of manipulation and simulation in digital photography re-defines the role of images as representations of the 'real' world. As Lister describes the change:

...the qualities and formal means of images were undergoing certain kinds of change; this was probably most remarkable in terms of the spectacular extremes of scale and detail, of focus and viewpoint, of subtle and dramatic kinds of juxtaposition, in the degree of fragmentation and fusion, and in the transformation and mutation of images that we were coming to regularly see in the cinema, in advertisements on our television screens, and in websites and computer games. There was a scrambling, to an unprecedented degree, of the real and the imagined (Lister, 2004:307).

Nevertheless, some researchers warn that these technology-driven changes in digital photography cannot be fully understood without the historical context, the social and cultural norms that determine such developments (Crary, 1993; Rosen, 2001).

The manipulative nature of digital imagery

The manipulative nature of digital technology makes image alteration that has always been a part of photography more obvious and questions the representativeness and objectiveness of pictures. A human-made photographic image without any bias is hardly possible. There are plenty of methods of manipulation used in photography. A photographer makes a series of choices, e.g. light, exposure, standpoint, aperture, framing that affect the result tremendously. Further on, the choice of photographs, the technique for development (in analogue) or processing (in digital photography), the output size and the medium – all these factors are variable and require decisions. Furthermore, some elements of an image can be suppressed or emphasized and elements from other ‘frames’ can be merged or reproduced alongside (Rosler, 2004:263). Finally, the context can determine the meaning of a photograph. A photograph that is cut out from its original context and put in another contextual sequence is the greatest manipulation without much interference leading to misinterpretation of the picture. This technique is often used in war propaganda but also in the boulevard press.

As we have seen above, the very nature of photography, either analogue or digital, is manipulative, which calls into question its representativeness. Instead, photography can represent a version of existing reality that takes the shape of the photographer’s intentions and is affected through material objects that are involved in the process.

Lister describes digital technology as ‘a critical tool which could demonstrate in practice what had been argued in theory for some three decades: that photographic images are themselves special kinds of constructions (1997:316). Art, advertising, mass media and entertainment are the more obvious among other areas where altered images have always been used since the invention of photography. In analogue photography, however, those practices were rather difficult and therefore performed mainly by professionals. For this reason, the majority of the population was unaware of such alterations and photography was usually believed to be representative. For instance, soviet photography of the Stalinist era often made use of photo manipulation and falsification to erase unwanted persons and change other details that do not match

the ideology of the time. The intent was to change the past through picture alteration thereby re-writing the history. Other examples of picture manipulation are often found in war propaganda in the past and in modern times. Apart from political intentions, there are other areas in photography that have used some kinds of manipulation to achieve desired results. Landscape photography of the nineteenth century was influenced by painting with its vivid representations of the sky. It was not possible with orthochromatic film to capture a landscape and the sky with its dramatic tone variations. Thus, photographers used different techniques (double-exposure, photomontage) for photographic skies to appear 'as presence, not absence'. As Rosler (2004:263) writes, these manipulations were 'in the service of a truer truth', one closer to 'conceptual adequacy'. The entire history of photography is a history of manipulation aimed at adjusting images to accord with social norms and expectations.

Despite the numerous examples of image alteration throughout the history of photography, it is digital photography that is often believed to be manipulative. Some people suppose that digital technology has led to the suppression of 'normal' photography. Mitchell describes straight, unmanipulated photography as 'normal' photographic practice:

'There I no doubt that extensive reworking of photographic images to produce seamless transformations and combination is technically difficult, time-consuming, and outside the mainstream of photographic practice. When we look at photographs we presume, unless we have some clear indication to the contrary, that they have not been reworked (Mitchell, 1994:7)'.

Although digitisation offers more opportunities for image alteration, retouching and manipulation have always been a part of photography since its invention (Wells, 1996). Batchen (2001:137) argues that photography is nothing if not a history of manipulated images. Manovich writes, that 'digital technology does not subvert "normal" photography because "normal" photography never existed' (Manovich, 2003: 245).

Moreover, Manovich goes further claiming that that two types of photography always co-existed: manipulated and not. 'Straight photography has always represented just one tradition of photography; it always coexisted with an equally popular tradition

where a photographic image was openly manipulated and was read as such' (Manovich, 2003:245).

A decade before Manovich, Rosler (1991) described 'straight photography' as a genre with its own history, politics and institutional frameworks. In this photographic practice 'evident artifice, construction and manipulation are avoided as a matter of principle' (Lister, 2004:314). Nevertheless, Lister stresses that a decision to avoid manipulations during or after the photographic process is a conscious choice within a wider set of possibilities that do not tell us how objectively a photograph represent reality. In her essay 'Image Simulations, Computer Manipulations: Some Considerations' Rosler warns that 'critical considerations of the possibilities of photographic manipulation tend to end with a tolling of the death knell for "truth"' (2004:262). She agrees that communicating 'facticity' is not the primary feature of modern photography, nevertheless, digital technology alone cannot be made responsible for the death of truth or for photography being 'used up'. Rosler (2004) moves the focus from the objectiveness of photography as a means of representing reality to the question whether photographic images can be used to 'tell the truth' about a reality whose appearance can be illusory. She reminds us of the openly manipulative traditions in photographic history, represented by the photomontages of the Dadaists and J. Heartfield. She writes:

In every photomontage was the implicit message that photography alone cannot "tell the truth" and also the reminder that fact itself is a social construction. This is not meant to deny that photographs provide some sort of evidence, only to suggest that the truth-value of photography is often overrated or mislocated (Rosler, 2004:279).

In Rosler's thinking, the identification of photography with objectivity is a modern idea correlating with other beliefs like 'technological progress'. She points out that the meanings of images 'are not fully determined by the technologies used in their production but rather are circumscribed both by wider hegemonic ideological practices and by the practices and traditions of those who oppose them' (2004:298). Similarly, Lister (2004:317) stresses, that 'the difference between analogue and digital image technologies is only one factor within a much larger context of continuities and

transformations'. There is a widespread view that makes digital technologies alone responsible for the changes in the production and use of photographic images or that the 'essential nature' of photography is threatened through the on-going digitisation. However, the changing role of photography is a 'part of a complex technological, social and cultural transformation' (VanDijck, 2008:58).

In order to understand the changes we must look closer at the established cultural forms and practices that are being extended and transformed through digital technologies (Lister, 1997:318) as well as to the new emerging forms of photographic practice and the use of images. The mass media, advertising, news, art, military and civil surveillance and entertainment are among many other areas that rely on the use of photographic images. Although the established social sites and institutions experience some transformation through the digital technologies, the most significant changes can be observed in the non-professional use of photographic media and images.

The ethics of Photo Manipulation

In order to assess the significance of new image technologies we also have to look at how images are used, by whom, and for what purposes (Lister:317).

Photo manipulation is nothing radically new. Henry Peach Robinson, a 19th century photographer, who promoted photography as an art form, was famous for his composite images printed from separate negatives. Although criticized for fooling the public with manipulated images, the artist defended composite photography as a highly demanding form of art that could be compared with paintings. Another famous example of an altered image was by Mathew Brady's photography company in the 1860s. The company placed a portrait of Abraham Lincoln's head on the body of John C. Calhoun, a Southern slavery supporter. Stalin was known to order removing unwanted people from photographs. In 1954, LIFE Magazine printed a composite photo of A. Schweitzer on his mission in Africa. The photo was made by the famous photographer W. Eugene Smith was also known to use potassium ferricyanide to hide or reveal areas of the image. Such manipulations would not be acceptable in today's journalistic practice as they contradict with photojournalistic guidelines. In 2004, the NPPA (National Press Photographers

Association) released a revised Code of Ethics that added principles for television and digital editing to the old code of 1946. The code is upheld by most photojournalists around the world. Its aim is to ensure honesty and accuracy in photojournalistic practice to maintain public confidence. Editing is acceptable as long as it maintains 'the integrity of the photographic images' content and context. Any alterations leading to misinterpretation or misrepresentation of subjects should be avoided' (NPPA Code of Ethics, 2004).

Outside of the NPPA code of ethics there is nothing wrong with image alteration as long as the image 'does not lie'. Nevertheless, coming back to the question of the representativeness of photography, its capacity to 'tell the truth' is questionable. Rather, a photograph is an interpretation of the real world and, therefore, it is the photographer's choice to decide on the extent of image alteration and whether to disclose any manipulations. However, there are many factors that give directions to image manipulations: the area, the medium, how the images are to be used and interpreted, and the reputation of the photographer, just to name a few. There are different levels of acceptable image alteration in professional photojournalism and in advertising, beauty and fashion magazines. Commercial and advertising photography cannot be held to the same standards as photojournalism. Ideally, there have to be separate ethical codes for different disciplines that fulfil the requirements, purposes and expectations of each area. Another issue is the disclosure of manipulations that are misleading or misrepresentative. Acknowledging manipulation would help the viewers in making their own judgment and finding their position in what is 'real' or 'fake', acceptable or not.

Images are altered for different reasons and there are plenty of possibilities between colour corrections and cropping that are often unavoidable in fiction and simulations. No camera is perfect and often the picture does not resemble the photographer's vision and concept. Colour correction does not contradict any ethical norms and is an integral part of any kind of photographic practice. Another level of manipulation often used in advertising, beauty or fashion magazines and the boulevard press include adding or removing objects, reshaping and retouching – techniques that significantly change the original image, sometimes making it hardly recognisable. Such kinds of image manipulation have more resemblance to painting or art than to photography. All image manipulation can be placed on a scale between the ethics and

aesthetics, whereby the emphasis depends on the kind of photographic practice. Photojournalism has the toughest guidelines considering the ethics of manipulation. In contrast, artistic photography sets in focus the aesthetics of the artwork and is not bound by representativeness. The much-debated manipulation in advertising, fashion and similar areas make use of their unconstrained freedom. However, it can be assumed that certain codes of ethics will also soon be applied to these forms of mass media.

Although image alteration has always been an integral part of photography, it has been a rather complex process that required advanced knowledge and skills. With digital technology, manipulation of images has become easy and accessible for non-professionals. Similarly to the Kodak revolution that made photography available to the masses, digital technology democratized image editing and made it a part of consumer photography. Even in the early digital age, software applications for image processing like Photoshop were expensive and required a certain amount of knowledge and were thus unaffordable by the ordinary public. Photoshop was primarily used by professional photographers and designers. Preparing images for printing was often time-consuming and high-resolution printing itself was not affordable for an average consumer. Today, there is a range of applications available for different devices, platforms and operating systems that allow almost any kind of image manipulation, from simple to advanced. Moreover, there are plenty of affordable services that allow images to be posted online or printed on various materials. The majority of mobile phones are equipped with a camera and there are many Apps for smartphones that allow image editing and manipulation. The affordable easy-to-use technology that has become ubiquitous has led to a growing number of people who take photographs and either print them, publish online or send them via messengers to other people. A non-professional analogue photograph was likely to be shown to a small group of friends and relatives. The global connectivity of the Internet provides a means of immediate dissemination of digital information, including pictures. Thus, images placed online on social networks' photographic showrooms and other public websites are 'public' and are viewed by many more people than the analogue pictures. Often, the viewers react with a 'like' or by leaving a comment.

Since the beginning of the snapshot culture initiated by Kodak, family and tourist photography are probably still the most popular genres. As described earlier in this chapter, since the invention of small-format photographic prints it has become common to give one's pictures to other people. With digital technologies, most photographic images are posted online or sent digitally over the Internet or mobile networks. The reasons for sharing photographs with other people are no different from those of conventional photography. Family photos and photographs of children are usually shared with friends and relatives to create an image of personal family life. Pictures from travelling are published to share impressions and show distant places or particularly beautiful shots to others. With the rise of digital technologies and the Internet, the snapshot culture did not change significantly nor did the cameras change except for the digital sensor being used instead of a film roll. What really did change is how images are used and disseminated.

Non-professional photo-manipulation

With the advent of consumer digital cameras and later the growing ubiquity of mobile phones with integrated cameras, 'snapshot' or amateur photography exploded. Due to the growing ubiquity of photo cameras and the Internet connectivity, the number of digital images that are shared and published online is also growing. As a result, a shared digital image is likely to be viewed by a larger audience than a printed photograph. Another major contribution of the global connectivity is the two-way communication where the audience can express their feelings about a shared photograph by clicking 'like' or writing a comment. These two factors – the wider audience and the audience's response - enabled by digital technologies serve as motivation to produce better and visually more appealing images to gain social attention and recognition. This explains the rising popularity of easy-to-use image-editing applications, especially those available for smartphones.

Tools for image manipulation

Following this trend, 'photo filter applications such as Instagram, Snapseed and Hipstamatic mark a new era in digital photography, one which allows users to easily improve mediocre images taken with camera phones through the application of vintage filters, film scratches, and polarisation effects' (Caoduro, 2014:68). The growing popularity of photo filter apps illustrates the nostalgia for the aesthetics of the old analogue photographs that are unique through their signs of age such as torn borders, film scratches and sepia colours. This "fetishisation" of the retro aesthetic characterises an aspiration for imperfection as a step away from the polished optimised aesthetics of digital photography. Instagram is one of the most popular photo filter applications. Created as a start-up by Kevin Systrom and Mike Krieger and launched in October 2010, it reported 200 million monthly active users in March 2014 (Tam, 2014). Instagram is a mobile user-generated networking service that enables users to take pictures and short videos and share them on different social platforms like Facebook, Flickr, Tumblr and Twitter. The service confines images to a square shape of 4:3 similar to Polaroid photographs and allows digital photo filters with different colour effects to be applied. Instagram is mainly aimed at snapshooters who want to add some unique aesthetics to digital pictures captured by the camera on their mobile device. The success of such pre-programmed photo filters motivated developers to program Instagram-similar pre-sets for Lightroom – a photo processor and organizer used mainly by professional and serious amateur photographers. However, in contrast to Instagram, these pre-sets are not free and need to be purchased and installed. In this way, easy photo manipulation through the use of pre-programmed pre-sets and filters aimed at amateurs finds its way into the professional world of image processing. The photo-filter apps can be compared with analogue photo-filters applied to the camera's viewfinder. They are limited to colour effects and not suitable for image processing that requires more tools and possibilities. There are a lot of software applications aimed at photo-manipulation and processing, some of which are discussed below.

Photoshop was the first image editing software application that came to the market in 1990 just after the first digital consumer cameras. As described earlier in this chapter, this software release had a revolutionary effect on photography. Image

alteration that in analogue photography was possible only in a dark room, required specific knowledge for film developing and printing whereas, with Photoshop, manipulation of images became accessible to a much larger group of people, e.g. designers, artists and amateur photographers. Currently, Photoshop is the leading program widely used by professional photographers, graphic designers and artists. However, the high price of the program makes it barely affordable for those who see photography as a hobby or leisure activity and do not make money with it.

The free software and the open source movement produced a powerful image editor with capabilities similar to Photoshop that can be downloaded and used free of charge. The GIMP is developed by a self-organised group of volunteers as a free software project based on the General Public License (GNU). The GIMP's first public release was in 1996, five years after the first Photoshop version came out. Ars Technica noted in its first review of the GIMP 2.6 that it 'aims to provide Photoshop-like capabilities and offers a broad feature set that has made it popular with amateur artists and open source fans. Although the GIMP is generally not regarded as a sufficient replacement for high-end commercial tools, it is beginning to gain some acceptance in the pro market' (Paul, R., 2008). The GIMP is a powerful image editor that relies on a large community of users and developers. This 'openness' has two major advantages: the software is in constant development and testing whereby new capabilities are added, bugs are fixed and usability optimised. Developers cooperate with a large user community who test the beta versions, provide feedback and express wishes for future development. Another asset of a large community is the pool of knowledge available online that encompasses wikis, tutorials, forums and social networks dedicated to this product. Apart from that, it is common in free and open source software where the source code is open for everyone to use that variations or derivatives of the original software are produced. One of the most popular derivatives of the GIMP is the GIMPShop where the original software interface has been changed to resemble that of Photoshop. This derivative program is designed for those who are used to working with Photoshop and have difficulties with the original interface of the GIMP. The fact that the GIMP is available for all major operating systems makes it accessible to almost everyone. Especially communities of amateur photographers describe the GIMP as a useful and powerful program that provides all the necessary tools for image

manipulation. By browsing the web for the use of the GIMP in amateur photography, it is possible to find various websites and blogs dedicated to amateur astrophotography, where users publish tutorials and share experiences of optimising photographs with the GIMP. DeviantArt, the largest online art gallery and community, also has a website dedicated to image processing with the GIMP (masterGIMPers.deviantart.com). It is a resource and tutorial group aimed to help new and experienced users of the GIMP to learn more about the software and its capabilities.

Although the GIMP is not the only alternative to the expensive Photoshop, it is very popular because it has a wide range of tools, it is cross-platform, non-proprietary and available free of charge. It is not easy to estimate how many people really use the GIMP as it is included in many Linux distributions and available to download from various websites (e.g., GIMP.org, sourceforge.net). The actual number of users could not be estimated even by the development team, as this was a topic for discussion in GIMPusers.com forum¹⁹. Nevertheless, the GIMP is the only free powerful alternative to Photoshop that offers professional tools for image manipulation and a strong support for a user community. Therefore, this software package is particularly useful for amateur photographers and those interested in image processing. The empirical part of this thesis includes a qualitative experiment with a group of people interested in learning to use the GIMP for image manipulation (Chapter 6).

To sum up, image processing and alteration has always been a part of photography. With the democratisation of photography - and especially with the rise of digital technologies - there is a growing demand for tools that can be used by non-professionals to optimize their pictures. Some of those tools are of very limited capability but can be used intuitively without any training (e.g. photo-filter apps). Other tools offer advanced functionality but require initial training to get started.

Some academic discourses regard a 'pure digitisation' as a possible development of digital imagery in the future. As Rosen argues, 'hybridizations of old and new- as when the computer becomes a virtual camera, thus realizing the digital in the model of the indexical – are made into transitional phenomena on the way to an era of 'purer'

¹⁹ <http://www.GIMPusers.com/forums/GIMP-user/16238-how-many-GIMP-user-are-there>, Accessed March 2014

digitalization (Rosen, 2001:315). It is the researcher's view that a connection will always exist, at least as long as we use photo cameras that are based on the same principal as the first ones invented. Digital technology enriched conventional photography with a new dimension that extended the technical possibilities of photography, made cameras and processing tools more ubiquitous and user-friendly and, more importantly, had significant implications for the social role of photography. Images are part of modern communication which is enabled through media convergence and recent advances in hardware and software development of digital technologies. Through production and consumption of images people communicate meaning, participate in online spaces and construct their identities. Image processing has always been a part of photography and today the majority of photographic services and tools provide simple opportunities for manipulation. However, many of these tools require a basic understanding of image processing and therefore, are less likely to be used intuitively by the majority of users. Some services and software applications offer automatic correction or pre-programmed filters that may be easily used to make an image more visually appealing. However, more sophisticated manipulations require skills and competencies that need to be learned. Informal learning that takes place through participation in online communities and social networks can help some users to acquire knowledge and skills. However, this type of learning is more suitable for people who already have a basic understanding of how to use the technology. Newcomers, without previous experience of dealing with digital imagery, may require additional support in the form of a formal tutorial to be able to start using digital technology for their photographic practice.

Chapter 5: A Survey on Everyday Creativity and the role of a computer in creative activities.

Introduction

Within the theoretical part of this research, valuable insights into the concept of everyday creativity and its role in the everyday lives of general public were gained. Nowadays, creative abilities are increasingly becoming a prerequisite for an interesting job, a successful career or exciting leisure. More people today tend to believe that creativity can be learned and enhanced through specific tools and techniques than ever before. Some of these creativity-fostering methods have become possible through digital technology.

The expansion of computers and the Internet has brought new opportunities for creativity, communication and learning. It has become easier to search for information, inspiration and ideas; the Internet has enabled instant sharing of different types of content; cell phones have mutated into personal multi-function devices capable of capturing a variety of media outputs. The increased availability of digital content production and publishing tools making them available for almost everyone has lowered the barrier to media production. Thus, digital media-based everyday creativity and participation within the online environment belong to the common activities of modern, digitised, social life.

Creativity is a contested term and therefore it is essential to identify the terms within which people operate when they mention creativity. The evaluation of creativity is a matter of definition that varies from one person to another. People have different standards for creativity by which they judge their actions. Sternberg (1985) found in his research on implicit theories that people operate within certain constructs which they use as a guide to judge creative individuals or creative products. It seems most important to investigate the constructs of the general public concerning creativity in general and their personal, everyday creativity in particular.

This study is concerned with exploring the field of everyday creativity as understood by general public 'from within'. People make use of creativity with a small 'c' (Gardner, 1984) throughout their lives. As discussed in Chapter 1, it is an everyday,

mundane, ordinary creativity of which everyone is capable; we use it to cope with difficulties, adjust to changing circumstances and to enrich our lives. As Runco and Richards (1998) wrote, creativity is a domain within which we all perform. Our work and leisure activities are often based on everyday creativity even if we sometimes are not conscious of it.

Everyday creativity in the digital environment forms the basis for this research; its focus is on the role of computer technology in the everyday creative activities of general computer and Internet users. I am interested in how the general public utilises computers as creativity support tools and in the obstacles that stand in the way of digital creativity. I also aim to investigate people's awareness of software-based creativity support tools, in particular free software and open source programs.

New media literacy is an important condition for a successful use of digital technology. It involves the essential skills of using software tools that allow the creation, manipulation and publishing of digital content. Apart from content production, the awareness of copyright and alternative licences is an essential part of new media literacy that is often underestimated. Open and free resources published under 'permission' licences such as General Public Licence, Creative Commons and others (Chapter 4) grant freedom for creativity, collaboration and learning. Therefore such resources in the form of software, tutorials and user communities are especially beneficial for increasing the new-media literacy of the general public and thus fostering everyday creativity within the digital environment. A significant part of modern social communication takes place in the online environment. For this reason, the ability to use the digital tools for creativity, self-expression and communication is a prerequisite for inclusion in the digitised society of today.

The field research has been undertaken to gather quantitative and qualitative data on people's habits and beliefs about everyday creativity as well as the use of computer technology and creativity support tools for creative activities. Quantitative and qualitative research methods usually have different goals. Quantitative research strives to obtain numerical data that is generalizable to a larger population. Qualitative research is an in-depth approach used to collect unquantifiable data from a smaller number of cases. With the mixed-method approach, I aim to explore the rather unidentified terrain of the everyday creativity of general computer and Internet users and the role of

computer technology within it. The objective is to gather some statistical data on existing behaviour, as well as to gain deeper insights into the phenomenon through qualitative methods.

This chapter deals with the first phase of the empirical study, which is an exploratory survey that was conducted as part of a larger, triangulated, research project. The aim of the larger study was to explore the digital-technology-based everyday creative practices of general public, evaluate the barriers that prevent many people from engaging with digital technologies and to determine whether the 'open' resources such as open source/free software and content published under open licenses can be beneficial for general computer users enabling them to engage with digital-technology-based creativity and thus participate in modern digital culture.

The decision to conduct an exploratory survey is explained by the lack of existing data on the phenomenon of everyday creativity and the role of computer technology in the everyday creative activities of general public in particular. Therefore, a primary data collection procedure was a necessary stage of the current research project. To this end, a survey was designed to explore the phenomenon of everyday creativity and to measure the familiarity with, and the attitudes toward, open source technology and its benefits for creative activity.

Surveys are widely used as part of the quantitative approach since they can help to identify the existing trends in beliefs, habits, behaviours and wishes of a sample population concerning the subject of the research or the phenomena being explored. Cohen, Manion and Morrison indicate that the survey method is suitable for research that intends to 'gather data at a particular point in time with the intention of describing the nature of existing conditions, or identifying standards against which existing conditions can be compared, or determining the relationships that exist between specific events' (Cohen, Manion and Morrison, 2000:169).

The methodology of the survey is based on an exploratory research approach whereby a combination of quantitative and qualitative methods is applied. The mixed-method approach aims to provide some insights into the rather less investigated domain of everyday creativity as well as to collect data on the role of computer and open source technology in creative activities. Within the scope of the survey, preliminary assumptions are to be tested with the purpose of building the foundations for the next stage of the

research project. In addition, the survey methodology and the data obtained can also serve as a starting point for a large-scale survey of the phenomena, which could assist in the investigation of the development of free and open source technology for non-professional creative people.

This chapter describes the methods used for the empirical phase of the study, the data collection and analysis processes followed by a discussion and the conclusion of this research stage.

Purpose of the study

The main purpose of this exploratory survey was to investigate the role of ICT and the Internet in everyday creative activities.

The exploratory survey was designed to answer the following research questions:

1. What kind of creative activities are performed with the help of computer technology and the Internet?
2. To what extent and for which tasks are computers and the Internet used to support creative activities?
3. What are the reasons for not-using ICT and the Internet for creative activities?
4. Are participants interested in acquiring skills and competencies that would help them to use ICT to support their creative activities? What are the most interesting areas for participants to learn?

A range of open-ended question were included to collect phenomenological data on participants' concepts, views and beliefs concerning their personal creativity and creative activities that involve any kind of creativity, leisure or professional the study participants are engaged with. These questions were aimed to explore the nature and diversity of participants' conceptions of creativity.

The chosen form of self-reporting, despite some limitations described further, can provide a view of creativity 'from inside' through people's subjective experiences, that can contribute to understanding of everyday creativity and grassroots creative activities.

Methodology

Primary data collection – Survey method

Primary data can be collected through various methods such as observation, focus groups, one-to-one interviews and surveys. Different techniques serve different aims whereby observation, focus groups and one-to-one interviews deliver qualitative, in-depth data concerning a small sample of people. The methods enable deeper insights into specific behaviours of the sample; however, the study's ability to describe larger populations is limited (Fowler, 1993).

Surveys are the primary method of quantitative research and aim to obtain statistical data. Survey methods are often based on a large number of cases to ensure objectivity, generalizability and reliability. 'Surveys gain their inferential power from the ability to measure groups of persons that form a microcosm of large populations, but rarely achieve perfection on this dimension' (Groves *et al.*, 2009:33).

According to Sellitiz, Wrightsman, & Cook (1996), survey design allows the researcher an opportunity to assess the attitudes, perceptions, opinions, behaviours and motivations of individuals regarding a certain phenomenon or object. Kerlinger (1986) notes that the methodology of survey research can be conceived of as an inquiry into the uniformity or regularity of some phenomena.

The aim of this research is to explore the use of computer technology and the Internet for creative activities in the social context. In the exploratory stage described in this chapter, I utilise a survey method with the goal of gathering primary data on the general public's attitudes towards personal, everyday creativity and the role of computer technology as a creativity support tool. The survey data should help to build the groundwork for the qualitative experiment described in the next as well as to evaluate trends and commonalities of public attitudes towards the topic of interest. Although the main aim of the survey is to explore the field, there was an attempt to construct a valid questionnaire and to collect a wide spectrum of data referring to the subject.

Web-based survey

There are four basic types of survey: *mail*, *telephone*, *online* and *in-person*. In addition, some of these might be self-administered or carried out by interviewers. Each format has its advantages and limitations; therefore, it is necessary to identify the most efficient method for a specific piece of research. 'One challenge for the survey methodologist is to figure out how best to use the available resources - how to balance the investments in each of the components of a survey to maximize the value of the data that will result' (Groves *et al.*, 2009:34).

For this study, I decided to use a web-based survey. According to Dillman (2000), web surveys seem ideal technologies for reaching rapidly across boundaries and great distances. The target population of this study are users of computers and the Internet. Although I had a self-selected sample for the survey, the aim was to get a sample as close to the Internet population as possible. For this reason, the sampling was not limited to a single geographical location. The web survey design proved to be the most appropriate for the intended purposes. On the contrary, mail, telephone and in-person methods of surveying would not reach the target population of this study. Moreover, these survey methods usually have a much lower response rate than online surveys (Dillman 2000).

One of the main reasons for choosing the Web survey method for this research was the advantages of online surveys listed by Dillman: low administration costs, manageable set up and administration, live tracking of responses, in-built response-filtering tools (Dillman, 2000:352). Another benefit of an online data input is that the data is being checked for accuracy before submission and storage in a database in a logical order. Kiesler and Sproull (1986) found that computer-administered surveys showed fewer mistakes, fewer blank items and fewer item refusals than paper surveys whilst still allowing standardisation and anonymity.

There are several limitations to web-based surveys as for example: the survey would not reach people that are not connected to the Internet, the low levels of computer literacy of some respondents may technically hinder the process of filling in the responses and sampling is difficult as no register of Internet users exists (Dillman 2000:355). The survey interface is designed for users with basic computer literacy,

which means that they have to be able to use a computer and the Internet for basic operations. Due to the reason that the population of interest for the current study are computer and Internet users, a web survey design based on an online platform as well as e-mail sampling is fully appropriate. The selected sampling method would eliminate people with no computer skills from the sample.

A web-based survey is conducted online through a web self-administered interface. The responses are stored in a database (MySQL) that can be accessed and monitored throughout the process. There is a range of tools available for web survey administration. No professional knowledge of computer programming is required to operate those tools. The manager has full control over the physical appearance of the survey. There is also a wide choice of pre-programmed question types known from traditional survey designs.

The exploratory-descriptive research approach

According to Pinsonneault and Kraemer (1993), one purpose of a survey may be to explore and become more familiar with the topic of the research and to test preliminary assumptions about it. A survey in this context is used to discover the range of responses likely to occur in the population of interest and to refine the measurement of concepts. A descriptive survey can be used to discover and describe the situations, events, attitudes or opinions that are occurring in a population and can usually provide data on the distribution of some phenomena in an entire population or among its subgroups. An exploratory survey focuses on determining what concepts to measure and how to measure them best. The exploratory survey is also used to discover and raise new possibilities and dimensions related to the population of interest.

The goal of exploratory research is 'to generate ideas, insights in order to better focus the problem' (Wrenn *et al.*, 2007) and create a platform for further descriptive studies.

Usually, a non-random-respondent selection process with a smaller number of people is sufficient since the aim of exploratory research is to gather a wide range of data referring to the subject of interest. The sample does not have to be representative of the whole population but it needs to be related to the larger sample of the intended

population to provide an idea of the behaviour and answers of a larger representative sample. Exploratory research is characterised by a flexibility of method and is used to obtain prior knowledge for the researcher regarding who will be targeted as a respondent, how the questions are to be phrased to reflect the vocabulary and experience of the respondents, when to ask the questions, where to find the respondents and why these particular questions need to be answered in order to make decisions (Wrenn *et al.*, 2007). Although exploratory research may generate a hypothesis, it is descriptive research that provides a test for the hypothesis.

Due to the relatively new domain of the use of computer technology for creative activities by the general public, exploratory fieldwork is essential to create a basis for further research. The aim is to conduct a survey that provides data on some phenomena and the impact of variables on these phenomena in a population. The survey tool serves exploratory purposes only. It is not to be regarded as a valid instrument for large-scale studies. Nevertheless, with a larger sample, statistical data collection and appropriate data analysis methods, descriptive data can be obtained from the survey results. For these reasons, I decided to use an exploratory-descriptive survey method, which is useful in exploring a new field of research whilst at the same time providing valuable data on which future work can be built.

Survey Administration Tools

The data was collected using the 'LimeSurvey' Open Source survey software (LimeSurvey Project Team, 2009). LimeSurvey is a powerful survey administration tool with the advantages of zero cost and an autonomous database system. The software comes with a good collection of templates and a dashboard for all operations like monitoring the surveys, setting quotas and displaying the results using a range of formats. LimeSurvey enables a survey to be run in different languages whilst all responses are stored in the same database.

The interviewee could choose his/her linguistic version of the survey, including English, German, Russian and Turkish, in order to have an immediate access to the questionnaire in the chosen language.

Sampling

The survey intends to investigate the new-media-based everyday creative practices of a sample of online population as well as the barriers that prevent many people from engaging creatively with digital technologies. For this survey I deliberately target adults with at least basic computer and Internet skills and who are currently using the new media technology. Investigation of offline groups or children is not within the scope of this research.

As there is no register of Internet users available, random sampling of the Internet population seems impossible. Another way to recruit the potential sample is to place the survey on specific websites and/or distribute the survey through e-mail or mailing lists. Therefore, I intended to use a non-probability sampling method, which does not involve random selection. Non-probability sampling techniques are useful when there are limited resources, an inability to identify members of the population and a need to establish the existence of a problem (Henry, 1990).

I tried to avoid placing a survey on websites and portals of any kind, as the domain of that specific service would result in a sample with a dominating variable, such as interests, profession or age.

For this exploratory study, a non-random, convenience sampling method was employed. Participants were found using an e-mail snowball method as the basis (Goodman, 1961). This method is based on recruiting people through survey respondents' personal contact networks. In other words, every respondent is asked to forward an invitation to participate in the survey to his or her personal contacts. In the past, respondent-driven sampling has often been used to reach a hidden population where no sampling frame existed (Heckathorn, 1997). Nowadays, in the age of online communities and social networks this approach seemed to be the fastest and cheapest way to reach the Internet population. The researcher distributed an e-mail with a short description of the survey, along with URLs to four language versions (English, German, Russian and Turkish) of the online survey and a request to forward the e-mail to others if possible. The sampling method proved to be successful and the survey resulted in 509 full responses over a period of three months.

Although the primary sample that was contacted directly by the researcher was biased by her age, interests, ethnicity, geographical location and languages, the final sample revealed a good diversity of age, gender, education level, professions, interests and geographical locations of respondents that exceeded the requirements of an exploratory study. Nevertheless, it has to be admitted, that the sample is not representative for the whole population of ICT users.

Survey Design

By using the snowball sampling method described above, the majority of responses were expected to come from the United Kingdom and Germany. These two big European countries have a well-developed computer and Internet infrastructure and therefore are well suited to the aim of this research. The questionnaire was initially constructed in English and then carefully translated into German. However, in order to reach a wider audience and to avoid the limitation of sampling only English-speaking and German-speaking communities and considering the demographic situation in Germany, two other languages were added. According to the German federal statistical agency (*Statistisches Bundesamt*), the majority of the population in Germany speaks German, but the largest ethnic sub-communities in Germany are Russian-speaking, with about four million people, and Turkish-speaking, with about three million. Also, in the UK, there are about half a million Russian-speakers and another half a million Turkish-speaking residents. Therefore, I decided to add the questionnaire in the Russian and Turkish languages to achieve more variety in the sample and a better response rate. The translation did not cause additional cost as the researcher used personal resources for accurate translation and data evaluation. The number of languages was restricted by the budget of the research project.

The e-mail notification and the start page of the survey offered a choice between four available languages. By adding additional languages, a bigger sample with a greater demographic variety could be obtained. I received responses from 12 different countries, of which 60% came for the United Kingdom and Germany.

The survey consisted of 20 questions: one numerical, three categorical, five multiple choice, four yes/no, two short-answer open-ended and four open-ended questions.

The combination of closed- and open-ended questions has been used to collect both quantitative and qualitative data, which is essential for the exploratory nature of this research. Closed-ended questions are easier to analyse but they offer a limited range of options. In contrast, open-ended questions allow for a richer and fuller perspective on the topic of interest, though the analysis is time-consuming. Open-ended questions give more freedom to respondents and, therefore, offer the possibility of spontaneity and elaboration (Polit *et al.*, 2008). Therefore, I decided to use open-ended questions for such expansive topics as creative activities and personal concept of creativity. In some cases, the same topic was covered by a combination of closed-ended questions and descriptive, open-ended questions. The aim of such sequences was to obtain both quantitative and qualitative data on the topic of interest.

Each respondent received an e-mail with a short description of the survey and link to the online questionnaire. The start page contained a drop-down menu for language selection, a welcome message and an anonymity statement. The following page contained the questionnaire in the selected language.

The survey was divided into three logical sections:

- Demographic information: age, gender, educational level, profession, country of residence.
- Everyday creativity and creative activities. The role of computer technology in everyday creative activities. Reasons for not using computers for creative tasks.
- Acquaintance with, and utilisation of, open source and free software Technology.

The survey aimed to explore two dimensions: the one of personal creativity and the other of the use of free and open source tools for creative production. There is a logical connection between these two dimensions. A respondent is being lead through questions starting with an evaluation of personal creativity, everyday creative activities, going further to creative activities on a computer, continuing to open source and free software creativity support tools and, finally, to a personal definition of creativity. Several

statistical questions were included that provide us with additional data that indirectly indicates respondents' computer literacy and therefore the reliability of responses related to computer software.

Duration:

The survey remained online for three months until the number of respondents exceeded 500. Thereafter, the survey database was transferred to an offline, password-protected server for further data evaluation and analysis.

Limitations of the Study

It is important to point to some of the limitations of the current study. First, the sample of participants used for this study was not randomly selected. A convenience sample has been used. Participants were solicited through the Internet via snowball sampling, as described above. The sample is not representative of the larger population and therefore, the findings are not generalisable. Due to an uneven distribution of demographical factors as country of residence, age, education and occupation, a more detailed analysis and correlation of data is not included in this study.

Questionnaires are a type of self-report method that communicates the personal conceptions and experiences of participants from their subjective perspectives in the best way. However, this method is often criticised for its limitations and bias. Social desirability, or 'the conscious tendency to see oneself in a favourable light' that leads to 'the conscious presentation of a false front, such as deliberately falsifying test responses to create a false front' (Raphael, 1987) is one of the most significant biases in self-reporting. In case of questions concerned with creativity, participants might have different concepts of it. Thus, people who think of creativity as of an exceptional gift are less likely to see themselves as highly creative individuals. In contrast, people who understand under creativity the everyday or the little 'c' creativity are more likely to report of being creative and engaged in creative activities. Honesty, accuracy in responding, issues of understanding or tendency to respond in a certain ways – these are other possible limitations of self-reporting.

Despite these limitations, self-reporting is a necessary tool in behavioural research as it enables exploring issues that cannot be researched through other techniques. It is especially relevant for this study that is concerned with the use of ICT for creative activities and personal conceptions of everyday creativity.

Due to the exploratory nature of the survey, a larger spectrum of parameters was included as it would be for a descriptive survey. There was an intention to evaluate which variables are essential and which have less impact on the area of study. In addition, different types of questions were used to gain a better understanding of the phenomena. A combination of quantitative and qualitative question types results in numerical and in-depth data that enables investigation from different angles.

Although qualitative data is difficult to code to achieve high reliability, it offers a valuable view of the phenomenon 'from inside'. Respondents' personal perspectives on their everyday creative activity build the kernel of this exploratory study.

The survey serves as a starting point for evaluating trends and proving some hypotheses as well as forming the basis for future research.

Although validity and reliability estimation are not compulsory for a smaller exploratory study, due to the relatively large size of the sample these criteria have been inspected.

Validity

'Validity' finds its roots in the positivist tradition, which to some extent was defined and strengthened by a systematic theory of 'validity'. Within the positivist terminology, 'validity' resides amongst, and was the result and culmination of, other empirical concepts: universal laws, evidence, objectivity, truth, actuality, deduction, reason, fact and mathematical data, to name just a few. It is within this tradition and terminology that quantitative research is traditionally defined (Winter, 2000).

Today, most of the known definitions of 'validity' fall into two categories: whether the means of measurement are accurate (Lehner, 1979) and whether they are actually measuring what they are intended to measure (Black and Champion, 1976; Kerlinger, 1986).

Wainer and Braun (1988) see 'validity' as a unitary term. Opposed to them, Winter describes 'validity' not as a single, fixed or universal concept, but rather as a 'contingent construct, inescapably grounded in the processes and intentions of particular research methodologies' (Winter, 2000:1). It can be applied to a particular stage of a research process or to a combination of certain stages, depending upon the researcher's beliefs as to the stage of the research process that is in need of validation. In my research project, validity assessment needs to be considered for the survey method of data collection described in this chapter.

Validity is a broader term that encompasses various types of measurement that vary according to discipline and research goals. The study with its exploratory aim is not designed for testing, but for collecting primary data on habits, concepts and activities concerning the general public's everyday creative activity and computer use for creative tasks. Therefore, there are three types of validity that are considered within this research project: external validity, content and face validity.

External Validity

The measure of external validity is the extent to which the results can be generalised and thus applied to other populations (Winter, 2000). One of the main factors that affect a study's external validity indicated by Campbell and Stanley (1963) is the process of sampling.

If subjects are not randomly selected from a population, then their particular demographic/organismic characteristics may bias their performance and the study's results may not be applicable to the population or to another group that more accurately represents the characteristics of the population. (Campbell & Stanley, 1963:5).

In this study, a random sampling of computer and the Internet users is not applicable since no register of the target population exists. Therefore, making a representative sample of the online population is impossible to achieve. For this reason, this study utilises a self-selected sample. A high external validity is not the primary focus of this survey's design. The sampling method used in the study serves the exploratory

goal of the research project taking into account that it is not generalizable to the whole population.

Due to the exploratory objective of this research project, the construct validity has not been measured since the main aim of the survey is not to test an existing construct, but to explore the phenomenon and create a basis for further research.

Content Validity

Content and face validity require evaluation of item content and an assessment of its relationship to the instrument's proposed purpose and application (Fitzpatrick *et al.*, 1998).

Following the suggestions of Grant and Davis (1997), a panel of experts is to be asked to address three elements in examining the expertise instrument: representativeness, comprehensiveness and clarity. The measure is to be revised according to the suggestions offered by the expert panel. The final version of the tool can then be used in a pilot study to assess other psychometric properties.

In this study, the content validity has been assessed by two supervisors of this research²⁰. The survey design was approved as valid and fully applicable for the intended purposes.

The aim of this survey is an exploratory one. There is no intention to test participants' knowledge on any subject. Therefore, a deeper investigation into other types of validity is not relevant.

Face validity

Face validity is one among many parameters used to assess the value of an experiment or test and to gather information about how the experiment is conducted and how applicable the results will be.

Face validity is concerned with how a tool or procedure appears to measure a certain criterion or phenomenon. It is usually estimated through a subjective evaluation, preferably by some representatives of the target population.

²⁰ Simon Downs, Professor Paul Wells

The face validity of survey instruments and tests is assessed by a cursory review of the questions by a small sample of individuals from the target group. The individuals make their judgments on relevance, logical order and comprehension of items.

The face validity enables the survey items to be refined and reduces systematic measurement error caused by inappropriately formulated questions.

A pilot study has been conducted to identify face validity and to test the applicability of the tool to the target population.

Questionnaires based on self-reporting generally have problems with validity due to social desirability bias and issues of understanding described in limitations of the study.

Pilot Test

The survey was tested on seven individuals from the target population to establish face validity. The participants in the pilot survey used the tools designed for the main study. They were asked to undertake the online survey to test it according to the following criteria: test interface, comprehension, relevance, consistency and length. All the participants in the pilot test provided a positive feedback on the usability and appearance of the survey. The web interface seemed intuitive to operate without additional instructions. All seven participants reported the survey to be comprehensive, logical and of appropriate length.

The average time of completion was between ten and fifteen minutes. Some participants spent more time on open-ended questions than others did. The last question where respondents were asked to write a personal concept of creativity was reported as the most sophisticated one because the issue required some thinking and writing the answer in the box. Nevertheless, all participants successfully managed to fill in all questions without any complications.

The pilot test showed that the suggested survey design and tool are applicable to the wider population and therefore the survey has face validity.

Reliability

Kerlinger (1986) describes reliability as the accuracy or precision of a measuring instrument. Black and Champion (1976) see it as the ability to measure consistently. Reliability is not an all-or-nothing concept; rather, it can be thought of as a sliding scale that ranges from minimal accuracy of measurement to highly dependable measurement of some variable of interest (Gregory, 2004). Reliability is defined through error, where the greater the measurement error, the greater the unreliability, less error means greater reliability (Kerlinger, 1986). As stated by Reynolds and Fletcher-Janzen (2007), reliability is often affected by the number and selected types of items for the test that, in reality, represent a limited sampling of the processes being examined.

According to Charter (2003), there are three general reliability categories under classical true-score theory: internal consistency, retest and inter-judge. The most important reliability used for the survey method is the internal consistency. It indicates how close the obtained score would come to the true score if the measurement instrument could be perfect (Charter & Feldt, 2002).

Coefficient alpha, split-half, alternate forms and KR-20, which produce the same value as alpha, but are used for dichotomous data, are the most common internal consistency approaches (Charter, 2003). In the split-halves method, the total number of items is divided into halves and a correlation taken between the two halves. This correlation only estimates the reliability of each half of the test. It is necessary then to use a statistical correction to estimate the reliability of the whole test. This correction is known as the Spearman-Brown prophecy formula (Carmines & Zeller, 1991). Due to the inflexibility of the method, there was a decrease in the use of the split-half method and an increase in the use of the alpha coefficient (Hogan *et al.*, 2000). Moreover, the method requires a random division into halves to measure the correlation between them.

The survey undertaken within this research project consists of logical sections that address different aspects, such as creativity and computer use. Therefore, a more flexible method such as Cronbach's alpha is required to be able to measure reliability separately for each of the survey's sections. Due to its flexibility, Cronbach's alpha is one of the most popular reliability statistics in use today (Reynaldo & Santos, 1999). It

allows the calculation of different question types as well as grouping questions that measure the same construct.

Cronbach introduced the alpha coefficient in 1951 as an instrument that measures internal consistency or average correlation of items in a survey instrument to gauge its reliability (Cronbach, 1951). The coefficient is an index of reliability associated with the variation accounted for by the true score of the 'underlying construct'. Construct is the hypothetical variable that is being measured (Hatcher, 1994). The alpha coefficient ranges in value from 0 to 1. The higher the score, the more reliable the generated scale is. Nunnally (1978:245) has indicated 0.7 to be an acceptable reliability coefficient but lower thresholds are sometimes used in the literature.

Cronbach's alpha is an internal consistency estimate of composite test reliability that fits for one attribute measure (Green *et al.*, 1977). When the measure is multidimensional, most of the reliability coefficients, including Coefficient-alpha, underestimate the true reliability of the scale (Widhiarso, 2007).

The dimensionality measure is defined as 'the number of latent variables that account for the correlations among item responses in a particular data set' (Camilli, *et al.*, 1995). A multidimensional measure is where the numbers of latent variables are two or more.

To achieve a better measurement of item correlations the questionnaire has been divided into two logical constructs or dimensions that account for one variable each. Reliability was calculated for each construct separately to ensure internal consistency within groups of items that measure the same or similar parameters.

The first, 'creativity' dimension measured respondents' attitudes to personal creativity and involvement in creative activities in everyday life. The second, 'Software and Open Source' dimension measured respondents' acquaintance with open source technologies and additionally, indirectly measured computer literacy. The remaining questions were intended to gather demographic and technical information.

The internal consistency of the 'creativity' dimension was calculated to have a Cronbach's Alpha of 0.65. The questions of the 'creativity' dimension measured different aspects of creativity that can differ from one subject to another. It is also possible that only some aspects of creativity are relevant for participants. These differences within the sample as well as throughout the answers of individual participants can negatively affect

the Cronbach's Alpha coefficient due to the low consistency of the responses. For example, questions seven and eight ask about general creative activities and questions nine and ten about creative activities with the help of a computer. It is possible that someone is involved in creative activities that do not require a computer. The responses of this respondent will not be consistent with the majority of the sample that is involved in creative activities and performs them with the help of computers. Due to such individual differences among the survey responses, the internal consistency coefficient of this part of the questionnaire is not higher than 0.65.

Self-evaluation of personal creativity is an important aspect that affects individual responses. The concept of creativity is on one hand rather abstract and on the other hand very personal. Every individual has his or her own criteria for creativity. That can result in under- or over-estimation of personal creativity. Just to give one example, one of the participants in the pilot study who had written and published several books and has a PhD answered that he was 'not creative at all'. Another man from the same group marked that he was 'very creative' listing gardening and decorating as his main creative activities. These two extreme cases illustrate how personal evaluation of creativity differs from one person to another. This is another influencing factor for the not very high coefficient of internal consistency of this part of the questionnaire.

Cronbach's alpha for the 'Open Source' dimension is 0.67. Here, the questions were aimed at finding out a) whether respondents are familiar with open source software and b) if they use open source products.

Cronbach's alpha is not very high in this case because some respondents stated that they used open source products, yet data from several questions indicate that the respondents were not familiar with the definition of 'free and open source software'.

To sum up, the average reliability coefficient of the survey is 0.66, whereby the alpha of the 'creativity' dimension is 0.65 and that of the 'Open Source' dimension is 0.67. The multidimensionality of the survey, inclusion of qualitative phenomenological questions as well as its exploratory goal lowered the reliability coefficient. Moreover, open-ended questions are of a qualitative value and therefore a quantitative reliability measure may be thought to be inapplicable, yet it does not reveal the qualitative reliability of the questionnaire. Nevertheless, the average coefficient of 0.66 is more than satisfying for an exploratory research. Schuessler (1971) stated that a scale is

considered reliable if it has an alpha value greater than 0.60. Hair *et al.* (1998) added that reliability estimates between 0.60 and 0.70 represent the lower limit of acceptability in quantitative research studies. To conclude, the alpha of 0.66 of the exploratory survey indicates that the instrument is reliable for the intended purposes.

It is important to note that it is not possible to prove reliability or validity conclusively, but results will be more accurate if the measures in a study are as reliable and valid as possible.

Analysis

Demographic characteristics of study participants

509 full responses have been received for the survey from 309 female and 200 male participants. The survey was designed for adult participants over 18. Eight age groups were defined: 18-23; 24-30; 31-37; 38-44; 45-51; 52-58; 59-65 and over 65.

The best response rate is among the three age groups between 18 and 37. The youngest age group 18-23 has 113 participants, the 24-30 group is the biggest with 196 participants and the 31-37 group has 106 participants. The less represented groups are 59-65 (13 respondents) and 'over 65' (6 respondents). Thus, for the data analysis the two groups were united into one called 'over 58'.

The educational level of participants is represented by 43% with a Bachelors degree, 20% with a Masters degree, 14% with undergraduate education, 9% with Vocational education diplomas, 8% with A-level and 4% with a PhD. For more detailed information on the sample, please see Table 5.1 below.

Table 5.1. Demographic characteristics of study participants

Demographic Characteristics	Frequency	Percentage	Male	Female	A-level	Under-grad	Vocational	BSc/BA	MSc/MA	PhD	Other
Participants	509	100%			41 8%	72 14%	44 9%	220 43%	102 20)	20 4%	10 2%
Female	309	61%			31	43	29	138	58	11	6
Male	200	39%			10	29	17	84	46	9	4
Age: 18-23	113	22%	39	74	31 27%	31 27%	6 5%	40 35%	3 3%	1 1%	1 1%
Age: 24-30	196	39%	73	123	2 1%	20 10%	21 11%	81 41%	59 30%	10 5%	1 1%
Age: 31-37	106	21%	45	61	1 1%	14 13%	8 8%	53 50%	25 24%	3 3%	1 2%
Age: 38-44	30	6%	16	14	3 10%	4 13%	5 17%	9 30%	7 23%	1 1%	1 1%
Age: 45-51	18	4%	4	14	1 6%	1 6%	0	9 50%	5 28%	2 11%	0
Age: 52-58	33	7%	11	22	2 6%	0	2 6%	21 64%	5 15%	1 3%	2 6%
Age: 59-65	13	3%	7	6	0	0	3 23%	8 62%	0	2 15%	0
Age: Over 65	6	1%	5	1	1 17%	2 33%	1 17%	1 17%	0	0	0

Demographic Questions

This section lists a short summary of each question and the responses obtained.

Question 1. ‘Your age’ – please choose one of the following answers.

N=509

This is a multiple-choice question where all participants over 18 should fit into one of the listed age groups: 18-23; 24-30; 31-37; 38-44; 45-51; 52-58; 59-65 and over 65.

The question was answered by all 509 participants.

Details can be obtained from Table 5.1.

Question 2. 'Your Gender'

N=509

This is a multiple-choice question to select between female and male that was answered by 100% of participants, 309 women and 200 men.

Question 3. 'What is the highest level of education you have achieved?'

N=509

This is a multiple-choice question to select between six pre-defined options and an 'other' option if required.

The question has been answered by the whole sample of 509 respondents.

The sample consists of 8% participants with A-level education; 14% undergraduates, 9% with vocational education, 43% with a Bachelors degree, 20% with a Masters degree, 4% with a PhD and 2% with other education.

Question 4. 'What is your current job?'

N=495

This is a single-word, open-ended question with the response rate of 495 out of 509 responses (97% of the sample). 3% of participants may not have been comfortable with an open-ended type of question where respondents are required to answer in their own words. Another reason could be an unwillingness to provide their employment information.

The analysis of this open-ended question resulted in twenty categories that are listed in alphabetical order in Table 5.2 below.

Table 5.2. Employment of Participants

Category	Number	% from 495
Accounting/Finance	20	4
Administrative/Clerical	12	2
Building Construction/ Skilled trades	11	2
Business/Management	25	5
Creative	28	6
Editorial/Writing	6	1
Engineering	50	10
Human resources	7	1
Information Technology	35	7
Teaching/Training	43	8
Marketing/Product	10	2
Medical/Health	35	7
Sales/Business Development	20	4
Science	5	1
Service	16	3
Sport	4	0.7
Student	154	31
Unemployed	16	3
Retired	6	1
Other	6	1

As seen from the above table (No. 5.2), one-third of the sample are students. That corresponds with the higher represented age groups of 18-30. 10% of respondents are engineers, followed by eight percent who are involved in teaching or training. Seven percent work in the field of Information technology and six percent are creative professionals. Other figures on participants' occupations can be derived from the table above (No. 5.2). The higher rates of students and teachers are possibly the result of the survey distribution method, which involved some university online networks.

Question 5. 'Country of current residence'

N=499

This is a single-word, open-ended question. 499 responses were received for this question (98% of the sample). The responses came from twelve different countries. Over one-third (35%) came from the United Kingdom, 25% from Germany, 22% from Turkey and 8% from Russia and GUS countries. Other countries are represented at lower rates as can be seen in Table 5.3 below.

Table 5.3. Countries of respondents' residence

Country	Number	% from 499 responses
United Kingdom	173	35
Germany	124	25
Turkey	111	22
Russia/GUS	40	8
USA	21	4
Israel	13	3
Sweden	6	1
Canada	4	1
Other (Europe)	7	1

The reasons for such a representation of countries lie mainly in the sampling method used for this survey and in the languages in which the survey was available.

Creativity dimension questions

The creativity dimension part of the survey is aimed at collecting data on the following issues: evaluation of personal creativity level (question six), creative activities in everyday life (questions seven and eight), use of computer technology for creativity (questions nine and ten) and personal concepts of creativity (question twenty).

Question 20. What is creativity for you?

N=472

The aim:

This qualitative question is aimed at finding out about a respondent's views on creativity. It is probably the most sophisticated question of this questionnaire. Depending on the individual, it can be answered spontaneously or require some consideration.

The data was intended to define the concepts of creativity that underlie a participant's survey responses.

Design:

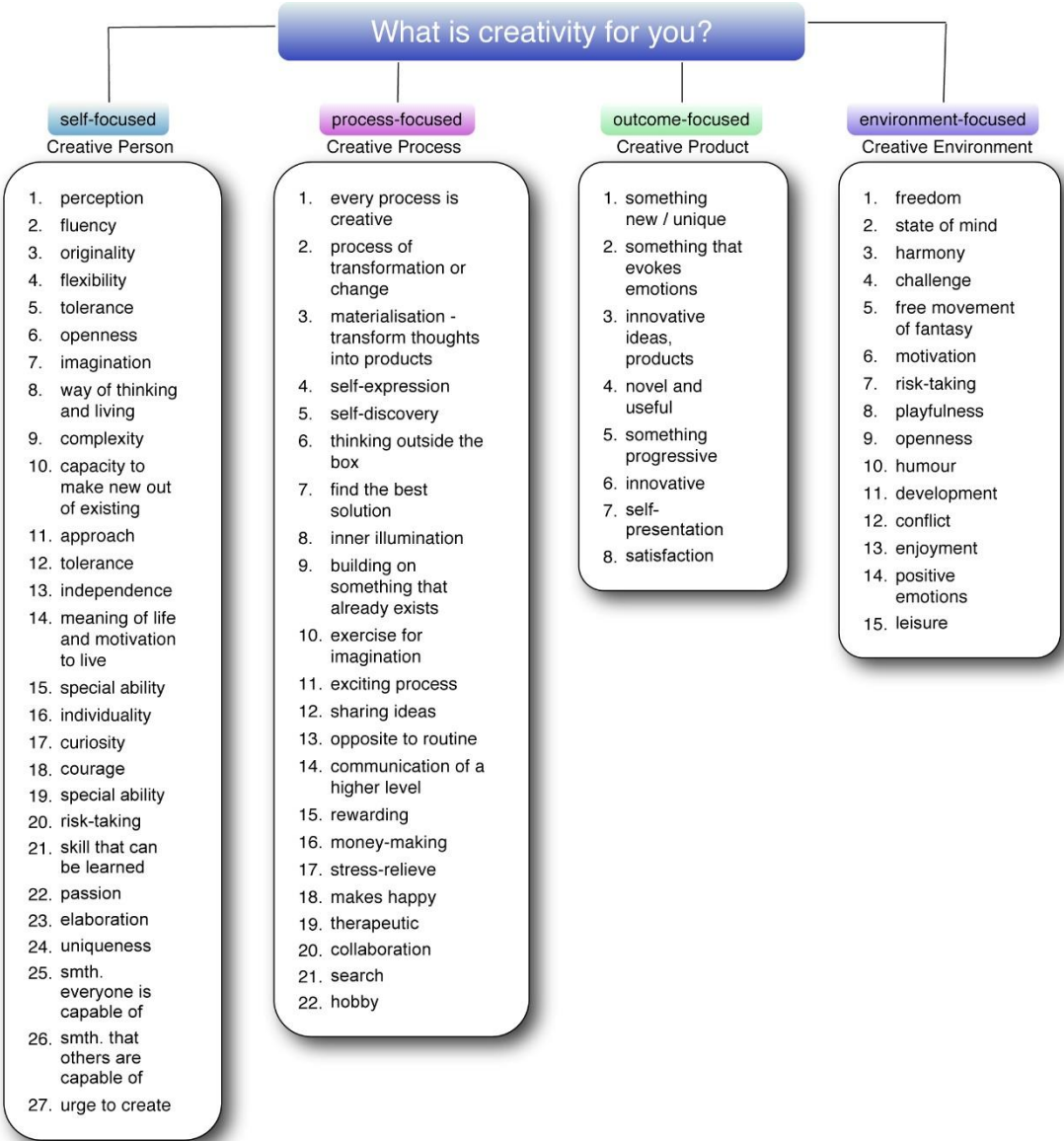
The question is open-ended with a text box provided for composing an individual answer. I decided to put it as the last item of the questionnaire for the following reasons: 1) participants will be lead into thinking about their own creative activity during the process of answering previous questions and, therefore, be better prepared to respond to this question; 2) participants may feel more comfortable by taking some time to think about the question if it is the last one of the survey; 3) putting this difficult question into the middle of the survey could prevent some respondents from completing the questionnaire.

Analysis:

472 answers to this question were received with some very interesting insights into different concepts of creativity. First, the responses were grouped according to keywords. Then, related keywords were put together into categories. Although every individual has his or her personal idea of what creativity is for him or her, four main categories of responses could be evaluated: self-focused, process-focused, outcome-focused and creative climate or environment. The data is presented in Diagram 5.1 below. A sample of responses can be found in Appendix 1.

An elaboration of this question and the analysis of data can be found in the analysis section of this chapter.

Diagram 5.1. Creativity Map based on study participants' responses



Question 6. Personal Creativity level

N=509

The aim:

Question 6 is the first one of the creativity dimension of the survey. It is designed to collect primary data. The aim of this question is not to test respondents' creative abilities, but learn about their subjective evaluation of their personal creativity.

Design:

Question 6 required participants to rate their personal creativity according to four levels: 1) very creative, 2) creative, 3) a bit creative and 4) not creative at all. The four levels represent a scale where the first three options list degrees of creativity and the fourth is a 'not creative' option. There was a deliberate choice of a four-point scale for this question in order to provide people with more categories of creativity from which to choose. Especially, it is relevant to the 'a bit creative' group, whose members believe that, although they have some creative abilities, they have insufficient confidence in them. In case of a 'yes or no' type of question, many of these people would probably have selected the negative answer.

However, for the analysis of this question, the data was coded in two different ways: as a four-point scale and as a dichotomous scale. For a detailed analysis, the four-point scale described above is used. However, in some sections of analysis I am more interested in dichotomous data that distinguishes between 'creative' and 'not creative' participants only. To achieve that, three levels of creativity are joined together into one group of 'creative' answers. In this case, a mean score is calculated accounting for an average level of creativity of a specific group or of the whole sample. The second group of 'not creative' answers relates to respondents who ticked the 'not creative at all' option.

Analysis:

The data obtained from the question has a high relevance for this survey and also plays a fundamental role for the further research. Therefore, the analysis of data has been undertaken in steps that examine regularities. It also was crosschecked with possible influencing factors such as age, gender and educational level. For clarity and a better overview, the data is presented in the form of tables and charts that are accompanied with descriptions and analyses.

Table 5.4. Participants' overall and gender-specific creativity rating

	Very Creative	Creative	A bit creative	Not creative
Men	16%	49%	29%	5%
Women	16%	42%	38%	7%
Overall	16% (81)	45% (227)	34% (174)	6% (29)

Table 5.4 shows the overall creativity rating of the whole sample as well as the creativity rating of men and women separately.

It can be clearly seen, that the majority of the sample put themselves into one of three creative categories with only 6% of the sample believing them to be not creative at all.

Interestingly, almost half of the sample, with a higher percentage of men (49%) than women (42%), chose the middle 'creative' category, about one third of participants selected the 'a bit creative' group with more women (38%) than men (29%). The 'very creative' category was chosen by 16% of both men and women.

The data appears to confirm the assumption, that the majority of participants see themselves as more or less creative. Additionally, the data reveals that men in this study tend to rate their creativity level higher than women, which is probably a psychological issue of gender-related differences of self-evaluation.

Findings

The data visualisation has shown that the majority of participants see themselves as creative and place themselves at one of three creativity levels. Only a small group claims to be 'not creative at all'. That indicates that almost everyone is convinced of his or her creative abilities, which is an important finding concerning the domain of everyday creativity.

This question is especially affected to social desirability bias. Being creative is usually conceived as a positive trait and therefore, participants are likely to present or see themselves in a favourable light.

Question 7. Are you involved in creative activities?

-these are any kind of activities where you use your imagination and create something new or new combinations of existing things, for example: crafting, decorating, photography, dancing, inventing new dishes, music-making, writing a Blog or any others.

N=509

The aim:

The aim of this simple yes/no question is to find out whether participants are involved in creative activities and to lead them into thinking which of their activities participants view as creative.

Design:

Question 7 asks participants if they are involved in any kind of creative activities in their everyday lives. Photography, crafting, decorating, music-making, creative writing, inventing new dishes and dancing were listed as examples or as an inspiration to view the everyday activities from the perspective of creativity.

Analysis:

The question was answered by all participants. The data revealed that 77% of all respondents are involved in creative activities: 81% of men and 75% of women.

The demographic variables of age and gender have been included into the data representation for a better comparison.

Findings

The data appears to confirm the assumption that creative activities are an important part of the everyday lives of the majority of people. As for this study, more participants aged between 31 and 44 appear to do something creative compared to other groups. In addition, there is a higher percentage of men involved in creative activities than women. The figures in general mirror the trends of personal creativity ratings of respondents described in question six with the exception for the group aged over 58. According to the data from question six, 96% of this group believe themselves to be more or less creative. However, according to this question's data, only 58% of men

and 71% of women are involved in creative activities. This indicates that a part of the group believes itself to have creative abilities without applying them in practice. The latter fact is an interesting issue that is outside the scope of this study but one that is suggestive of the need for deeper research. However, these figures represent respondents' personal conception of creative activities, therefore there is no claim for any objectivity of the data.

Question 8. General creative activities

'Please state your creative activities if you answered "Yes" to the previous question.

The aim:

The purpose of this open-ended question is to collect qualitative data on activities that participants define as 'creative'. The data on 'general' creative activities is to be compared with the data on 'creative activities with the help of computers' (Question 10). Additionally, this question was thought to lead people into thinking about their everyday activities from the 'creative' perspective.

Design:

This is an open-ended question for those participants who gave positive answers to the previous question (No. 7). The aim of this qualitative question is to gather more information on the creative activities of respondents from their personal perspective. The choice of this question form was intended to give people more freedom to write about their creative activities rather than to select them from a list. Every individual has a personal concept of what can be counted for creative, therefore no boundaries or categories were defined. For the answer, a large textbox was provided sufficient for several lines of text or plenty of keywords.

Analysis:

As a result, 389 of 398 respondents who answered positively to the previous question have listed their creative activities. Nine people left this question unanswered, which is not rare for open-ended questions that require more thinking and writing than general, multiple-choice ones.

The creative activities listed by survey participants range from the very common like crafting, photography or decorating to the uncommon like animal breeding, searching for presents or eating.

The most popular creative activities listed by respondents were: photography, crafting, creative writing, decorating, gardening, music-making, inventing new cooking recipes and drawing.

Findings:

Survey participants presented a wide range of creative activities in which they are involved. Interestingly, many respondents see creative aspects in common, everyday activities like cooking or gardening. Nevertheless, there are also highly creative or even unique creative engagements found on the list. A sample of the responses can be found in Appendix 1.

Question 9. The use of computer technology for creative activities

'Do you use a computer or the Internet for any of your creative activities?'

(Even if it is an indirect use like e-mailing or searching the web)

N=509

Following queries about general creativity, we move on to the role of computer technology in everyday creative activities.

The aim:

This is an important question for this study. It aims to investigate the extent to which computer technology is being used directly or indirectly for everyday creative activities. The question was intended to encourage participants to think about the role of computers and the Internet in their creative work.

Design:

Question 9 is a yes/no question asking if a respondent uses a computer for his or her creative activities.

Analysis:

The question was answered by the whole sample. The answers reveal that a rather high percentage (76%) of all respondents use computers for creative activities - 83% of men use computers intensively as opposed to 73% of women.

The figures of respondents who use computers for creative activity (76%) are close to the percentage of participants who are involved in creative activities (77%). Therefore, these two groups were crosschecked for consistency. Surprisingly, I found that only 85% of participants who are involved in creative activities use computers as tools for creativity. Consequently, the other 15% indicated that they use computer technology for creative tasks even if they stated in question seven that they are not engaged creatively in any tasks. The possible reason for this logical inconsistency is that this question added a technological dimension to creativity that was possibly overlooked by some participants in question seven. Additionally, a simple misunderstanding of the question could lead to a measurement error. Also, due to social constructions of creativity, it could have been regarded by participants as something unique in question seven. However, the everyday creativity specified in later questions might have been a discovery for some people who had never looked at creativity from that angle.

Findings:

The majority of participants uses computers to support their creative activities, whereby the percentage of men is higher than that of women.

Computer usage for creative purposes according to participants' personal rating of their creativity.

The aim here is to explore whether there is any dependency of the study participants' rating of their creativity and the scope of computer usage for creative purposes discussed in question nine. The cross-section data check revealed that 93% of respondents who believe themselves to be 'very creative', 82% 'creative' and 67% 'a bit creative' use computers for creative tasks. As can be derived from the figures, a higher evaluation of personal creativity correlates with higher rates of computer usage for creative activities.

Q 10 Creative activities with the use of a computer

N=367

The aim:

This open-ended question is designed to gather qualitative data on the range of creative activities for which survey respondents use computers.

Design:

This question was for those participants who gave positive answers to the previous question (No. 9). As with question seven, I decided not to confront people with pre-defined categories of creative tasks and used an open-ended type of question instead. There were several reasons for doing so. The first one lies in the exploratory nature of this research. In an exploration of a new field, it is necessary to give participants sufficient freedom to make their own decisions. Open-ended questions are hard to analyse, but they offer a dimension of qualitative data which is valuable in exploratory research. The other obstacle in using textboxes for open-ended questions is that people often leave them blank for various reasons and skip to the next questions.

Analysis:

Out of 391 respondents who answered positively to the previous question, 367 gave their written responses for this question. Twenty-four (6%) left the question unanswered. The possible reason for failing to answer is that some people might feel uncomfortable when composing answers in free-text form. Another reason could be that some participants who are mainly involved in digital forms of creativity may have listed their computer-based creative activities in question seven and did not want to repeat them.

The responses were allocated into the twelve main categories presented in Table 5.5. The whole sample of 367 respondents who answered this question is set as 100%. Therefore, the percentage rates have been calculated according to this sample as a whole. The figures in the table are listed in decreasing order.

Table 5.5. **Creative activities using computers**

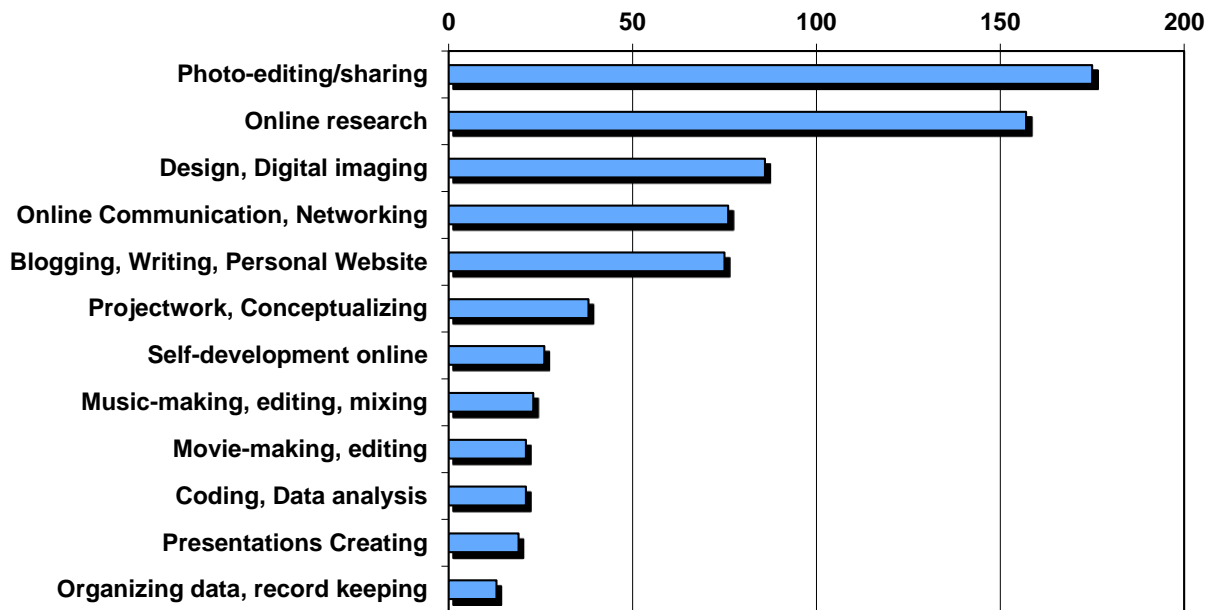
Creative activity using a computer	Percentage (of 367 responses)	Number
Photo-management, editing, sharing online	48%	175
Online research, search for ideas/inspiration/information	43%	157
Design, Web design, Desktop Publishing, Digital Imaging	24%	86
Online communication, networking, ideas exchange, commenting on others' creative work	21%	76
Writing, Blogging, Mailing Lists Participation, Administering own Website	20%	75
Project-planning, project work. Concept-creating, Mind-mapping	10%	38
Self-development, Training online	7%	26
Music-making, editing, mixing	6%	23
Movie-making, editing, mixing	6%	21
Coding, software-development, data analysis	6%	21
Creating presentations	5%	19
Data organizing, record keeping	4%	13

As can be seen from the table, there is a wide range of creative activities that are performed by participants with the help of computers.

Working with the respondent's own photographic images, which involves downloading them to a personal computer, cropping, retouching, editing and sharing with others over the Internet, was revealed to be the most popular creative activity using a computer with 48% of all responses. 43% of respondents see online research as a part of the creative process and it is the second most popular creative activity. 'Online research' is a generic term for such activities listed by respondents; it includes looking online for inspiration, techniques, information, recipes and other people's work. 24% of responses have listed design, web design, desktop publishing or digital imaging. 21% are actively involved in online communication, networking, the exchange of ideas and commenting on other's creative work. 21% practise creative writing/blogging, participate in mailing lists or own and update personal websites.

For a better overview, the data has been visualised in the form of a bar chart (No. 5.1), whereby the X-axis represents the number of participants and the Y-axis the categories of creative activities using computers.

Chart 5.1. Creative activities using computers



Findings:

There is a wide range of different creative activities that participants perform with the help of computers. There are two categories that gained the highest popularity among respondents: all kinds of operations with digital photographs and online-research for creativity. Nevertheless, the mentioned ‘creative’ activities require different types of creative engagement. Some of them could be regarded as ‘active’ or ‘initially’ creative, which involve the process of creation as, for example, designing, digital imaging, music-making and similar. Other activities are more concerned with information-filtering and processing, such as research, communication and networking, therefore they can be seen as ‘passive’ or ‘derivative’ forms of creative activity. However, all creative activities can be perceived as an interplay of something that already exists and an innovative input of the creator. Blogging is one of the most illustrative examples of such a combination. However, the nature of creative engagement and different types of creative activity is an issue for itself that can raise an interesting debate and discussion. Some of

its aspects have been discussed in Chapter 1 of this thesis.

Question 15. If you do not use your computer for creative purposes, why? (Please choose all that apply).

N=222

The aim:

The purpose of this question is to identify the reasons why some respondents are not using computers for creative activities. Being one of the fundamental questions of this survey, it is aimed to test the assumption that insufficient computer knowledge and skills, as well as the lack of appropriate software tools, prevent many people from using computers as creativity support tools.

Design:

The multiple-choice question type lists possible reasons for not using computers for creative tasks. Respondents are required to check all boxes that apply. If the reasons listed are not applicable, there is an 'other' option to select.

There were seven options given:

- I am not a 'creative' person,
- Computers don't help me to be creative,
- Lack of computer knowledge / software skills,
- I have no creative software,
- I would like to, but do not know where to start,
- I have no time for that,
- Other.

The question mainly targeted the people who answered in question nine that they do not use a computer for creative activities. However, I also expected responses from participants who, in question ten, gave rather indirect uses of computers for creative activities as, for instance, 'research' or 'communication'.

Analysis:

222 responses (40% of the sample) to this question were received. There are 106 more people who felt addressed by this question although they answered in question

nine that they do use computers for creative tasks. The possible reason for this is that, although people are already engaged creatively with computers, they gave the reasons for not performing the more sophisticated operations they are eager to do.

The results are combined in Table 5.6 (below). The two right-hand columns of the table show the cross-sectional analysis using the data from question nine. The aim of this analysis is to establish whether the reasons for not using computers for creative activities vary in two groups: the one that is already engaged in creative activities using computers and the other that does not connect creative activities with computer technology.

Table 5.6. Reasons for not using computers for creative activities.

Question 15.

Reason for not using computers for creative activity	Total N=222	Men N=72	Women N=150	Use computers for creativity (Question 9) N=106	Do not use computers for creativity (Question 9) N=116
I am not a 'creative' person	33 (15%)	10 (14%)	23 (15%)	8 (8%)	25 (22%)
Computers don't help me to be creative	49 (22%)	18 (25%)	31 (21%)	19 (18%)	30 (26%)
Lack of computer knowledge / software skills	73 (33%)	22 (31%)	51 (34%)	39 (37%)	34 (29%)
I have no creative software	31 (14%)	9 (13%)	22 (15%)	13 (12%)	18 (16%)
I would like to, but do not know where to start	52 (23%)	20 (28%)	32 (21%)	31 (29%)	21 (18%)
I have no time for that	66 (30%)	19 (26%)	47 (31%)	39 (37%)	27 (23%)
Other	16 (7%)	7 (10%)	9 (6%)	10 (9%)	6 (5%)

Taking a closer look at the responses with a higher popularity, we see that more than one third of the sample (33%) gave the lack of computer knowledge and software skills as the reason for not using computer technology for creative purposes. Another 30% have no time for creative activities. 23% would like to be creative with the help of a

computer but do not know where to begin. There are no significant differences between the responses of men and women apart from the option 'I would like to, but do not know where to start' which was selected by more men (28%) than women (21%).

However, if we divide the sample (n=222) into two groups: the first group consisting of people who answered in question nine that they are already involved in creative activities using computers (n=106) and the second group comprising those respondents who do not use computers for creative activities (n=116), we notice some differences in the answers. More people of the second group selected the options 'I am not a creative person' and 'computers don't help me to be creative' than from the first group. By contrast, more people in the first group gave as reasons 'lack of computer knowledge and skills', 'do not know where to start' and 'no time for creativity'.

From that, it can be deduced that people who are familiar with creative activities using a computer give more technical reasons for not being involved in digital creativity. On the contrary, people who are alien to computer creativity tend to give as reasons their 'beliefs' that they are not creative at all or that they see computers as useless for their creative activities.

Findings:

As can be seen from the table, the lack of computer knowledge is selected by respondents as the most popular reason for not using computers for creative activities. The 'would like to, but do not know where to start' option, which also gained high response rates, is closely related to the first reason. The third reason that is connected with the first two is the 'I have no creative software' option which was selected by 14% of the sample. These three categories can be combined into one major issue, namely the lack of digital competencies that was revealed to be a major obstacle for a significant proportion of the respondents when considering the use of computer technology as a tool for creative tasks.

Question 16. If you use a computer for creative activities, where?

N=509

The aim:

This question aims to find out about the places where computers are used for creative tasks. The main purpose, however, was to examine the extent to which private

home computers are used for creative work. The data should contribute to the investigation of the domain of everyday creativity that involves the use of computer technology.

Design:

This is a multiple-choice question where respondents were required to check all options that apply to them. The question listed five places: home, work, study place, friend's, Internet-Café and the additional 'other' option.

Analysis:

The question has been answered by the whole sample of 509 people.

That means that respondents who answered previously that they do not use computers for creative activities also responded to this question. Although the question clearly stated 'computer use for creative activities', all participants provided responses to this question. Presumably, those participants who do not use computers for creative activities answered in regard of their general computer use habits.

The statistical data of responses is collated in Table 5.7 (below).

Table 5.7. Places of computer use for creative tasks by respondents

Places of computer use for creativity	Percentage	Number
At home	80%	408
At work	37%	190
At my study place	22%	114
At friend's	13%	66
Internet-Café	5%	27
Other	1%	6

Findings:

According to the data, the majority of respondents (a high rate of 80%) use their home computers for creative activities and 13% perform creative tasks at their friends' private computers. Other figures stand for public places and reveal that 37% of participants use computers at work for creative tasks and 22% at their educational institutions. Finally, only 5% go to Internet-Cafés for these purposes.

Question 17. Would you like to learn to be more creative with the help of a computer?

N=509

The aim:

The question is aimed to test the assumption that the majority of people want to learn to use computers for creative tasks.

Design:

This is a yes or no question that has been answered by the whole sample of 509 respondents.

Analysis:

According to the data, 76% of the group (390 respondents) would like to learn to be more creatively engaged with computers. The rest of the group gave the negative answer.

To recap the data of Question 9 where participants were asked whether they used computers for creativity 76% (391 participants) of the group is already engaged creatively with computer technology and 24 % (118 participants) is not. Compared to the data, there are significantly more respondents eager to learn using computers for creativity that respondents currently not using the ITC for creative activities.

As a result of cross-checking the data, out of 118 respondents who currently are not creative using computers 72 (62%) would like to learn to be more creative with the help of computers. As can be deduced from that, many of those who are not currently creatively engaged with technology are eager to learn to be more creative using computers.

However, there are also respondents who are involved in computer-based creative activities but do not wish to learn anything else. Out of 391 participants currently using computers for creativity 70 (18%) do not want to acquire new skills. This group may consist of people who believe that technology is not helpful for their creative activities or of creative professionals who believe that they have mastered the essential skills already.

I also looked at the sample of 111 respondents who answered in question seven that they are not involved in any creative activities.

According to the data, 74 (67%) of respondents would like to learn to be more creative with the help of a computer.

Findings:

The data of this question confirms the assumption that the majority of people would like to learn to use computers for creative tasks. Moreover, 67% of people who are not involved in any creative activities wish to learn use computer-based creativity support tools. A significant part of respondents who are already using computers for creativity are eager to acquire new skills. The data illustrates that there is a demand for learning digital creativity techniques among the sample.

Question 18. If you had the software and the skills, would you use a computer for creative tasks?

N=509

The aim:

This is another question that is aimed to find out if people are interested in using computers for creative activities.

Design:

This is a yes or no question which is aimed to find out if people want to use computers for creative activities if they had the necessary software and skills.

Analysis:

As a result, 445 people (87%) of the whole sample (509 respondents) answered positively that they would use computers for creative tasks and the rest of the sample, 64 people (13%) would not.

Looking at the sample of respondents who answered in question nine that they do not use computers for creative activity, in the current question it is obvious that 66% of them (76 respondents) would use computers for creative tasks if they had the software and the skills.

Findings:

It can be derived from those figures that the majority of participants are eager to use digital technology for creative purposes.

Question 19. Please state which creative tasks would you use a computer if you had the necessary skills?

N=290

The aim:

This is one of the most important questions of the creativity section. It sets out to investigate the creative activities which people are interested in undertaking with the help of computers.

Design:

This is an open-ended question for those participants who gave positive answers to the previous question (No. 18). The aim of this qualitative question is to gather more information on the creative activities respondents would like to do using computers, presuming that they had the necessary software tools and the skills.

As with previous open-ended questions in this survey, the intention was to give people freedom to write down their thoughts without any pre-defined categories.

Analysis:

This question resulted in 290 responses. The possible explanation for the lower response rate is that many people are already using computers for creative activities and felt that this question was not applicable to them. This question could also have been skipped by participants who believe either that they are not creative or that computers would not help their creativity. Busy respondents who claimed not to have enough time for creative activities may also have ignored this question.

Eleven main categories were extracted from the open-ended responses. The results are listed in Table 5.8, below.

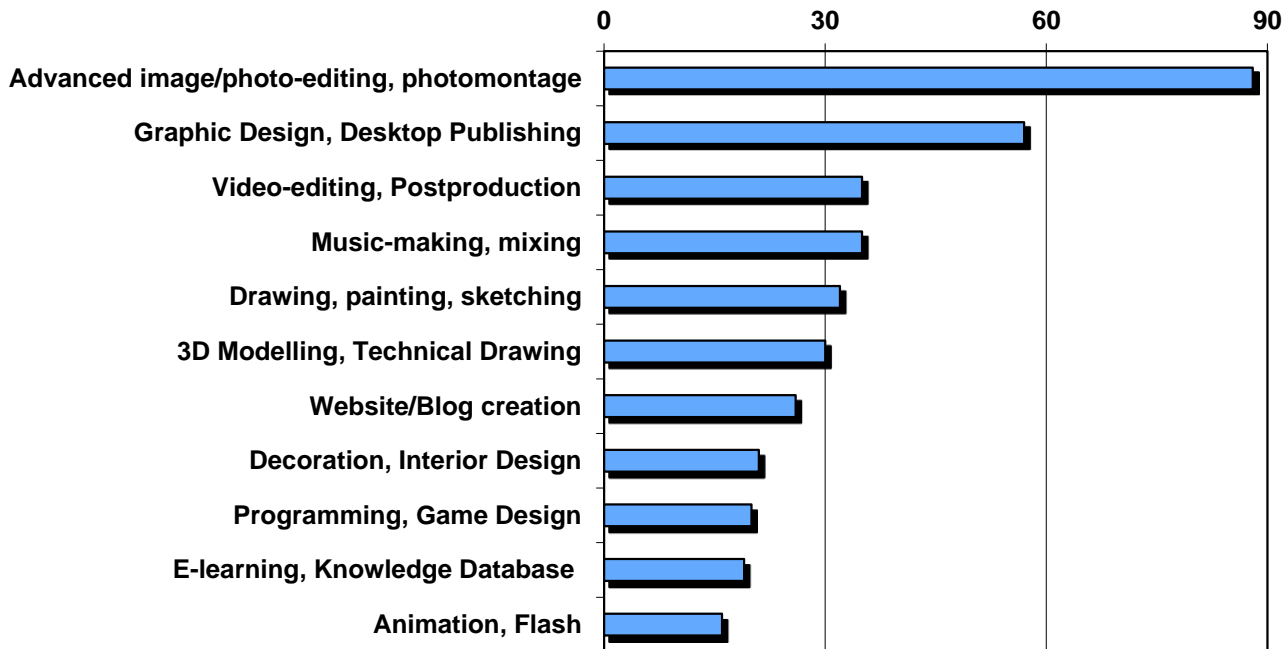
Table 5.8. Creative activities participants wish to perform with the help of computers.

Creative activities	Number	Percentage
Advanced image/photo-editing, photomontage	88	30%
Graphic Design, Desktop-Publishing	57	20%
Video-editing, Postproduction	35	12%
Music-making, mixing	35	12%
Drawing, painting, sketching	32	11%
3D Modeling, Technical Drawing	30	10%
Website/Blog creation	26	9%
Decoration, Interior Design	21	7%
Programming, Game Design	20	7%
E-learning, Knowledge Database	19	6%
Animation, Flash	16	5%

If we take a closer look at the results, we see that the first place, with the votes of one-third of respondents, is given to photography and image editing. This corresponds with the responses to question ten where participants listed the creative activities they already do with computers. Although the most popular activity remains the same, participants are eager to perform more advanced operations in image editing as well as to acquire new skills for digital content manipulation and production. The second place, with one-fifth of the sample, includes all varieties of graphic design and desktop publishing for private purposes or for work. The third place is shared between 'Video-editing and postproduction' and 'Music-editing and mixing' with 35 votes. Digital drawing, sketching and painting directly on a computer screen is slightly behind with 32 votes. 30 people listed 3D-modelling and technical drawing. 26 respondents would like to create and run their own websites and blogs. 'Interior design and house decoration' was listed by 21 participants. 20 votes were for programming and game design, followed by 19 who want to design e-learning platforms and databases and, finally, 16 votes for animation and Flash.

For a better overview, the results are presented in the form of a bar chart (No. 5.2) where participant numbers are located on the X-axis and the categories of creative activities on the Y-axis.

Chart. 5.2. **Creative activities participants wish to perform with the help of computers**



Findings:

As can be clearly seen from Chart 5.2, the most popular creative activity that participants are interested in is advanced photo manipulation. Compared to the range of creative activities participants already perform using computers, as obtained in question ten, a clear enhancement can be seen in the range and quality of the activities listed as desirable. These activities are distinguished by their increased difficulty that requires a high level of new-media literacy and advanced knowledge of creativity support applications.

Software and Open Source dimension questions

This part deals with the questions that have the purpose to obtain mainly statistical data on the use of free and open source software and the participants' awareness of the

underlying concept. The data should help to prove the hypothesis: although open source and free software is widely used, many people are not familiar with the corresponding licences (e.g. General Public License) that grant openness and freedom. As a result, some people confuse the software they did not pay for with free software.

Nowadays, many computers come with pre-installed software, e.g. Microsoft Office. In addition, due to software piracy, it is not hard to find illegal versions of proprietary software without paying the whole price to the manufacturer. Therefore, many people do not pay for the software they use and, consequently, some of them suppose that they are using 'free software' being unaware of the terms and licences of distribution.

The awareness of copyright and alternative licences is an important issue of the new-media literacy. It helps to prevent piracy and to use free resources legally without fear of breaking the law.

The software section of the questionnaire was designed to collect primary data on participants' subjective evaluation of their habits and behaviour in regard to software use in general and for creative purposes in particular. Additional statistical data has been collected with the purpose to crosscheck the validity of responses. For instance, in question eleven, respondents were required to state the computer operating system they use. This question contributes to the overall picture of an individual computer user. For example, if someone works on Microsoft Windows or Mac OS, he or she is very likely to use mainly proprietary programs as well as free and open source tools. In contrast, Linux, Solaris and other open-source-based system users can be pre-supposed to have advanced computer knowledge and awareness of free software and the open source movement. One cannot rule out the possibility that many of this group consciously use mainly non-proprietary software. The awareness and the use of free and open source software correlates with the level of the new-media literacy.

Question 11. What is your computer operating system?

N=509

The aim:

This question's data combined with other results from this section is thought to help in evaluating the extent to which the free and open source software is used by study participants.

Design:

This is a multiple-choice question to choose from four options: Windows, Mac OS, Linux and 'other'. It is thought possible that some people use several operating systems, therefore participants were asked to tick all options that apply to them. The question has been answered by the whole sample of 509 participants.

Analysis:

Table 5.9. **Operating Systems used by Participants**

Operating System	Percentage	Number
Windows	91 %	463
Mac OS	9 %	46
Linux	6 %	30
Other	1 %	5

According to the data, there are 91% Windows and 9% Mac OS users among respondents. Usually, being a proprietary OS user, one is dependent on commercial software packages produced by 'Microsoft', 'Apple' or other manufactures. Almost all respondents who stated that they used Linux or other operating systems also selected Windows or Mac OS. It is almost impossible to work completely 'open source' on proprietary platforms. This question was deliberately included in the questionnaire with the aim of testing the measurement error of question 12 where participants had to select the type of software they use (commercial or FLOSS).

The responses to this question show that 99% of respondents use proprietary operating systems. Therefore, the rate of use of commercial software is expected to be about the same.

Question 12. What kind of Software do you use?

Please select all that apply. If you do not use any of those, skip to the next question.

N=509

The aim:

The aim of this question was to find out what kind of software people use. There were three options to choose from: 1) commercial, 2) Free/Open Source, 3) I do not know. Participants were instructed to select all options that apply. The last choice was provided to allow for the possibility that some people may not be aware of the software configuration installed on their computers. Over a half of respondents (56%) ticked the commercial software box and 51% selected the Free/Open Source option. Every fifth respondent did not know what kind of software he or she used.

Table 5.10. **Software types used by Participants**

Type of software	Percentage	Number
Commercial	56%	291
Free/Open Source	51%	262
I do not know	23%	119

These figures compared to the ones from the previous question, concerning the operating system that participants use, reveal that there is an inconsistency with the data showing 91% Windows users and 9% Mac OS users.

The majority of proprietary operating system users are very unlikely to work on 100% non-proprietary software. Therefore, they do use commercial programs but probably are not aware of it because of the reasons described above.

Among the participants in this survey, there is a high percentage (51%) of Free and Open source software users. In addition to that, according to the survey data, only 56% of respondents are using commercial software. This is a rather low rate, as the whole sample uses commercial operating systems and therefore the people are committed to using some commercial applications as well. However, these figures have low reliability due to the insufficient level of new-media literacy of participants. From 262 users who checked the box 'Free / Open Source software' only 157 have selected the commercial option as well. That means, that 105 respondents claim to use free and open source software only. This indicates that many people are not familiar with the

concept of free and open source licensing and therefore their responses to the questions in this part of the survey do not reveal the 'real' situation.

Moreover, out of 256 respondents who did not select the 'Free and Open Source' option, 99 stated in question 13 that they use Mozilla Firefox, which is an open-source application. As can be derived from these figures, a significant proportion of participants is using open source software without knowing it.

People tend to state that they use free and open source products being unaware of their non-proprietary nature. A common misconception about free software is the word 'free' which many understand as 'at no cost' instead of 'freedom' and apply it to any software product they did not pay for.

The aim of this question was not to establish true figures about the use of proprietary and non-proprietary software, which can easily be found in professional, large-scale surveys. On the contrary, the goal was to gain evidence for the assumption of the public's lack of awareness of the concept of free and open source software even if the usage rates of some products are growing.

The true extent of free and open source software used cannot be estimated through the answers provided by the participants of this survey. However, a more important issue could be evaluated – the lack of awareness of the different software licences and information about existing free and open source applications.

Question 13. Do you use any of the following applications?

*If **Yes**, please check all that apply; if **No**, proceed to the next question.*

N=509

The goal of the next question is to clarify the misunderstandings of commercial and free/open source software usage from the previous question. Several of the most common open source applications were listed whereby participants were asked to select all software they use. The 'I do not know' option was also included for those who have difficulties in answering. If respondents do not use any of the applications listed, they could skip to the next question.

Table 5.11. Free Software/Open Source Applications used by Participants

Applications	Percentage	Number
Mozilla Firefox	54%	277
Mozilla Thunderbird	8%	41
Open Office / Neo Office	18%	92
Irfan View / VLC Player/other free viewers and players	28%	147
Free or Open Source Graphic/Music Software	37%	191
Other Free or Open Source Software	33%	172
I do not know	18%	192

The question has been answered by the whole sample of 509 respondents. Over half of them (54%) use Mozilla Firefox, the popular open source browser. Free or Open Source Graphic and Music software account for 37% of users in this sample. Almost one third of participants (28%) use free players, viewers and other multimedia tools and 33% use other free and open source applications. However, almost one-fifth of the sample (18%) could not classify the software listed and checked the 'I do not know' option.

Question 14. How much money per year would you spend on software to help you be creative?

N=509

The aim:

The question is aimed to find out how much money people are ready to invest in creativity support software.

Design:

This is a multiple-choice question with four options: £/€0, £/€1-50, £/€50-15 and over £/€150. The price categories are deliberately low as the survey targets the general public and not creative professionals on the assumption that amateur 'creatives' would not want to spend much on creativity software.

Analysis:

According to the results, 29% of respondents would not spend any money for creative software; 31% would spend between £/€1 and £/€50; 22% between £/€50 and £/€150 and 19% over £/€150 for creativity support programs.

Table 5.12. Amount of money participants would spend on software for creativity

Amount of money	Percentage	Number
£/€ 0	29%	147
£/€ 1-50	31%	157
£/€ 50-150	22%	110
over £/€ 150	19%	95

Findings:

As the data revealed, only every fifth participant is ready to pay more than £/€150 for creativity software tools whereas others would not spend that much. Every third respondent does not want to spend anything on creativity support tools. This illustrates, that software packages for creative activity designed for the general public have to be accessible either free or at very low cost in order to be widely used.

Free and Open Source software use by creative professionals

The participants who use computers for creative activity professionally were selected from the sample. The group consists of twenty participants: one interior designer, two photographers, two industrial designers and fifteen media- and graphic designers. Then, I looked at how many of this group used commercial software and free and open source software. As a result, all participants of the group were using commercial applications, however only a half of the group was also using free and open source tools. As a next step, I checked the group of 10 professional 'creatives' who were not using free and open source software for how much they were ready to spend on creativity support tools. I found out, that two persons would not pay anything for creative software, one person would pay £/€1 - £/€50, four persons were ready to pay between £/€50 and £/€150 and, finally, four persons would pay over £/€150 for creativity support applications.

Hence, only four out of the ten creative professionals who were not using free or open source software were ready to pay over £/€150 for creative tools. The remaining six members of the group claimed that they were using only commercial software but they would not pay more than £/€150 for that. Consequently, I assume, that those

people either did not use creative software on private computers or that they used it illegally.

Findings Summary

This part of the chapter will discuss the main findings and trends of this exploratory study. The following major findings have been obtained from the survey data:

- Creativity is a multi-dimensional concept that consists of a unique combination of different terms for each individual.
- Most of the respondents believe themselves to be more or less creative.
- A majority of study participants is involved in creative activities ranging from simple to professional.
- A high percentage of respondents are already engaged in creative activities with the help of computer technology.
- The lack of digital competencies, time and creativity software are the main obstacles to using computers for creative activities.
- Most creative work using computers is performed on private machines.
- A high percentage of participants is eager to acquire new skills for creative activities on computers.
- A high percentage of participants would use computers for creative activity if they had the skills and the software.
- Most participants are eager to perform technically advanced creative tasks using computers.

Each point is presented with a more elaborated discussion in the following part of the chapter.

Individual Creativity Concept

The term 'creativity' is a highly contested and multidimensional term. Therefore, it is important to understand that the meaning of creativity differs from one individual to another. Whilst some people believe creativity to be unique, others bring the term in connection to everyday activities.

Nelson, who investigated the origins of the term 'creativity' sees it 'not as a given human attribute or ability, but as an idea that emerges out of specific historical moments, shaped by the discourses of politics, science, commerce, and nation' (2010:1). She describes it as a modern concept that sees imagination as productive and positive force. By questioning the modern usage of the term by creative industries and creative arts she

points out to the multiple and contradictory ways in which the idea of creativity is deployed in the present: 'for example, the way in which creativity can sustain a focus on social innovation, as in Florida, and personal self-expression, as in Julia Cameron's popular self-help books; the way in which creativity can be directed towards the cultivation of 'great leaders,' as Simonton proposes, or the 'power' and 'freedom' of 'mass creativity,' as Leadbeater asserts' (2010:23).

Creativity is a generalised term that when used without specification can be understood in a variety of interpretations. Certain sets of commonly accepted meanings of creativity exist within different domains. For example, in business, creativity is closely related to innovation including new products, services and ways of running a business. In arts, creativity is more likely to be perceived as novelty, originality and aesthetic value in social context. As for personal or everyday creativity, as discussed in Chapter 1, people connect it with novelty and positive experience for an individual involved in creative act.

I start the discussion with the last question of the survey (Question 20), which deals with personal definitions of creativity written by respondents. As mentioned above in the explanation of this question, I examined the definitions given by study participants and grouped those of similar context together. This resulted in four groups with each group focused on different aspect of creativity: the person, the process, the outcome or the environment. (Diagram 5.1). The groups combined terms that dealt with four different layers of creativity: self-focused, process-focused, product-focused and environment-focused.

Self-focused responses describe the characteristics or abilities of a creative person or of a person during a creative process. Some examples include: openness, flexibility, originality, risk-taking and uniqueness (Diagram 5.1).

The second dimension of process-focused responses comprises description, characteristics, effects and the goals of a creative process, including 'process of transformation or change', 'search', 'self-discovery', 'ideas sharing' and 'collaboration' (Diagram 5.1).

The third category lists product-focused responses that refer to the outcome of a creative process - the creative product. Among others, such characteristics as

'something new or unique', 'novel and useful', 'innovative', 'evoking emotions' were mentioned (Diagram 5.1).

Factors that nurture and accompany creativity and the creative process are grouped into the fourth dimension of the creative climate or environment. Harmony, freedom, humour and state of mind are some examples that were given by survey respondents. The complete list of keywords is set out in Diagram 5.1. Some commonalities can be found with the first category of 'self-focused' responses. However, in that case, 'characteristics' refer to a creative person and not the environment.

To conclude, although definitions of creativity vary in their approaches and demands, they all fit into a unitary, four-dimensional scheme that was derived from the primary data. Its conformity to the creativity definition proposed in 1961 by one of the founders of creativity theory, Rhodes, signifies that it is a working depiction of the 'grassroots creativity' model.

Personal creativity rating

Subjective evaluation of creativity is far more relevant for the domain of everyday creativity than formal creativity tests. An individual acts creatively within his or her own concept without rating his or her creative ability according to a scientifically acknowledged scheme. Therefore, phenomenological methods are being used to explore 'grassroots creativity' from an inside perspective.

It is natural that every person has his or her own definition of creativity. According to the survey data, this definition usually consists of a set of criteria that need to be fulfilled to name something or someone as 'creative'. These 'creative' criteria vary dramatically from one respondent to another. Some people view many ordinary everyday activities as creative. In contrast, other participants who, for instance, value the 'uniqueness' of a creative product, believe themselves to be insufficiently creative because they are not able to fulfil their high expectations of 'creativity'. For these reasons, I stress that this study is concerned with the participants' subjective views of their own creativity and all the data reflect their experiences and beliefs.

The survey showed that the majority of study participants grant a place for creative activity in their lives. According to the data, 94% of respondents describe themselves as being creative and only 6% think that they are not creative at all. I admit

that each participant rates his or her personal creativity level subjectively according to his or her own concept and the answers are affected by social desirability bias. Nevertheless, this confirms the assumption that almost everyone believes to be capable of creative activity and, moreover, that creativity has become a part of the most people's personalities. Nevertheless, due to the unrepresentativeness of the sample and the social desirability bias, the data cannot serve as the basis for any definite conclusions. A large-scale study with a representative sample would be able to verify this assumption.

Everyday creativity and creative activities

Following the personal creativity rating section, participants were required to state if they are involved in creative activities and to list them in a free text form.

Along with the aim of collecting the data on the rates of creative activity, there was an intention to explore the range of activities that people believe to be 'creative'. Also, this introductory question should lead people into thinking about their everyday activities from the 'creative' point of view, which was essential for the subsequent questions.

The survey showed that, compared to 94% of participants who believe themselves to be more or less creative, only 77% stated that they were involved in any kind of creative activities. From that can be derived that 17% believe themselves to be passively creative without applying their creativity in practice. There is a higher percentage of men than women who are involved in creative activities.

In the open-ended part of the question, survey participants listed a very wide spectrum of creative activities in which they are involved. The majority of answers contained 'common' everyday creativity of which the most popular categories were: photography, crafting, creative writing, decorating, gardening, music-making, inventing new cooking recipes and drawing. However, the list also contained mentions of highly creative or even unique artistic work. Interestingly, some respondents came up with very unusual creative activities like animal breeding, searching for presents or eating.

The diversity of listed activities illustrates the multidimensionality of the domain of everyday creativity. It is obvious that everyone rates the personal creative activities according to his or her individual concept of creativity. Therefore, the data derived from

this question is useful in providing phenomenological insights into the nature of everyday creativity. In contrast, statistical analysis is not applicable in this case.

Computer use in creative activities

The following part of the questionnaire is concerned with the role of computer technology in the everyday creative activities of survey participants.

Study participants were required to state whether they use a computer directly as a tool for creativity or indirectly, for instance as a means of communication, research and/or storage of digital creative content. According to the data obtained, computers are used for creative activity by 76% of the whole sample and by 85% of respondents who stated that they were involved in creative activities. Unsurprisingly, there is a higher percentage (83%) of men than women (73%) who use technology for creative purposes. This mirrors the overall trend of technology use where men outnumber women in engaging with technology. For instance, according to Eurostat, in 2009 women in the UK are less numerous than men online, with 79% penetration compared with men's 84%.

A correlation check of computer usage for creative activity and personal creative activity evaluation revealed that the more creative the participants see themselves, the more likely they are to use computers for creative purposes. Thus, 93% of 'very creative' participants use computers compared to 67% of the 'a bit creative' group. However, there is no evidence about which of the factors is the primary cause. Therefore, looking at the phenomenon from a different angle, it is equally probable that an active engagement with creative technology positively affects the respondents' personal evaluation of their creativity.

The bottom line is that, according to this study, there is an intimate correlation between the participants' evaluation of their creativity level and the extent to which they utilise computer technology for creative tasks.

Creative activities that involve computer use

A follow-up, open-ended question required listing creative activities that are performed with the help of computer technology. The most popular activities mentioned by participants referred to photo management and sharing along with online research for ideas and inspiration. These widely-practised actions presuppose a basic level of

computer and new-media literacy, although they are mainly based on communication and filtering of content rather than on initial creation.

Nevertheless, there is a noticeable share of more creative activities that require advanced technical skills and knowledge of digital content-creation techniques. Just to name a few, every fourth participant practises some kind of design and digital imaging, every fifth is actively engaged in blogging, mailing lists, communication and managing their own website. These activities, however, require a certain level of new-media literacy and can deservedly be classified as advanced.

Although the 'digital media' are a relatively recent creation, the general public is making the first steps towards creative content production by engaging actively with information technology and the Internet. Nowadays, 'learning by doing' is the most common and probably the most time-consuming method of acquiring new-media skills. As long as there is no unitary system for a widely accessible adult media education, the general public will proceed at a very slow pace towards digital production.

Barriers that lead to computers not being used for creative activity

In the scope of this study, participants were required to select reasons for not using computer technology for creative purposes. The findings revealed that a lack of computer skills, software knowledge and software tools are the major reasons for not using computers for creative activities. Lack of time is another barrier that prevents many from engaging with creative activities with or without help of ICT.

An essential finding, however, is that people strive to engage with technology creatively and to participate in online environment. According to the study, the majority of participants (87%) stated that they would use computers for creative activity if they had the necessary software and skills. Moreover, 76% of all respondents are eager to learn to be more creative with the help of computer technology. Interestingly, that 67% of participants who are currently not involved in creative activities also wish to acquire new skills in using creativity support tools. Hence, it appears that a rather large group of people believes that computers can lead them into creative activity, which is a finding worthy of further investigation.

To sum up, although modern society suffers under digital inequality and even digital exclusion due to the lack of new-media literacy, there is a demand for the knowledge and skills required for digital content production. The majority of people acknowledge the advantages of digital creative activity and strive to become active contributors to digital culture.

Creative tasks study participants wish to be able to do with the help of computers

The creative tasks that participants are eager to perform using computers are in their complexity a step forward compared to activities for which computers are already used. The list comprises creative content production methods such as: image manipulation, designing, video- and music-editing, modelling and much more. People's awareness of digital production practices is an important milestone on the way to becoming content producers themselves. However, these activities require creativity support tools of a near professional quality as well as advanced skills for operating them. A prerequisite for successful participation in digital culture is access to appropriate creativity software in combination with advanced content production skills.

The Free and Open Source domain offers free access to creativity support tools and learning materials that are in the public domain. Yet, these resources need to gain greater public awareness if they are to benefit both the producers and the users.

Computer Software dimension findings

The findings of the creativity dimension of the survey confirmed the assumption that many people use computers to some extent for everyday creativity. The software and open source part of the questionnaire revealed that the majority (80%) of participants perform creative digital activity on their private home computers. Specific free and open source programs have become very popular among general users. For instance, every second participant claimed to use the Mozilla Firefox Internet browser and every fifth uses Open Office – the powerful open source alternative to the Microsoft Office suite. However, the underlying concept of 'freedom' and 'openness' remains undetected by most of them. Two aspects of 'freedom' are of major interest to an average user – 'free' in the sense of 'at no cost' and 'free' meaning 'free to share'.

The lack of awareness of the advantages of the free and open source software movements leaves the wide range of valuable resources undiscovered by many people. As a result, they see commercial tools as the only ones available to support their creative activity. However, proprietary creativity software is hardly affordable for ordinary users. For instance, one of the most popular digital imaging software bundle “Adobe Creative Suite Design Premium” costs from 1810£; Adobe Photoshop’s price starts from 650£. The survey revealed that only every fifth participant is ready to pay over £/€ 150 for creativity support tools. Yet, this is still a rather low price for a software bundle given that creative production usually requires several programs for different purposes.

The survey data indicates that creativity support tools are in high demand, but they should be accessible in terms of cost and availability to the general public. Alternatively, software piracy will continue to flourish or those who try to operate honestly will remain without tools for their creative activity.

The survey shows that a significant proportion of participants do not distinguish between ‘free and open source’ software that is licensed on a non-commercial basis and the software they use ‘for free’, which means that it has not been paid for. The figures for operating system usage indicate that almost all participants use proprietary computer operating systems such as Microsoft Windows or Mac OS. Both systems are proprietary and therefore they usually require certain commercial programs to work with. IT professionals and advanced users are able to work 100% with free and open source applications. However, it is not easy for an average user to avoid using proprietary tools some of which are included in the installation package of the operating system. Nevertheless, only 56% of respondents stated that they used commercial applications and 51% claimed to use free and open source software. The incoherence of these figures with operating system usage rates speaks again for an insufficient media literacy level.

Awareness of copyright regulations and alternative licences for digital content are essential components of new-media literacy. As the survey reveals, the majority of participants are eager to acquire new skills for content creation and especially image processing and manipulation. However, many of them are not ready to pay for creativity support tools. Instead, they abstain from using the tools, or use them illegally. Raising the awareness of the existing licences and the widely available offers of free resources

can help to increase the new-media literacy of the general public and thus diminish the gap of the digital inequality. The free opportunities for digital content production, manipulation and sharing can foster everyday creativity and self-expression – activities that contribute to a more pleasant and fulfilled social life.

Conclusion of the Chapter 5

Nowadays, creativity has been taken from its pedestal of being a unique gift of a genius and presented to the masses as a path to innovation and self-actualisation. Promotion of creativity techniques for work and education by such leading authors as Edward de Bono, Michael Michalko and others has raised the awareness of creativity in modern society. 'Creativity is a skill and a habit. You need to learn and practice the skill, which then becomes a habit. But even without any special creative skill you can always seek to have new ideas and to put them forward' (Edward De Bono, 2004:49).

The exploratory survey described in this Chapter provided primary on the personal concepts of everyday creativity, the extent to which computer technology is used for creative activities and for which tasks, participants' motivation to acquire ICT skills to support creative activities and which areas are the most interesting to learn. The data also revealed that there is little awareness about the Free and Open Source concept and corresponding software tools and learning resources.

The results of this study reveal that people strive to participate in digital production but there are several barriers that prevent many from doing so. The findings revealed that a lack of computer skills, software knowledge and software tools are the major reasons for not using computers for creative activities. Lack of time for creative practices with or without computers is another obstacle stated by many participants.

Despite the variety of personal concepts of creativity, the majority of respondents believe themselves to be, to some degree, creative. They are involved in creative activities for which computers are widely used. While some creative tasks are performed directly using computers, for others, computers serve as tools for research,

communication and storage. The most popular activities listed, however, do not require much creative input as for example: photo-sharing, online research and communication.

The analysis of collected data confirms that a high percentage of survey participants is eager to acquire new knowledge and skills but do not know how to approach this in practice. A significant proportion of study participants is eager to learn to perform advanced creative tasks using computers as for instance, photo manipulation, different arts of design, creating their own website, video and music. However, these practices require not only high-class software packages but also the advanced skills and knowledge essential for digital content creation.

According to the survey results, only a few people are ready to pay for creativity support applications with the rest of the group being willing to spend only small sums of money for them. Considering the general public's needs for digital content creation, there are two main requirements that should be fulfilled by the software: firstly, advanced functionality and secondly, accessibility in terms of cost and usability. In other words, applications that are aimed at non-professional 'creatives' have to be available free or at very low cost, they have to be suitable for simple to advanced operations with digital content and the usability and software design needs to be adjusted to the skills of the target audience.

Many proprietary applications fulfil all the requirements but one - most of them are not cheap and therefore not affordable for an average user. In contrast, the domain of free and open source software offers a wide range of creativity resources that are applicable for creative tasks of various difficulty and mastery levels.

However, as the study showed, a significant percentage of respondents is not aware of the existence of alternative software licences and their advantages in comparison to the commercial ones. The majority of products released under these licences are available at no cost, they can be freely shared and modified, the community of developers collaborate at international level, which leads to a rapidly growing community of innovative software solutions available as free or open source software. Previously, the FLOSS²¹ products were criticised because of their lack of descriptions, help units and tutorials. Today, however, many well-developed applications come with

²¹ Free/Libre/Open Source Software

detailed documentation that enables a quick and intuitive initial skill adaptation training for specific software. For an end-user, the free and open source software domain offers a range of tools and tutorials from simple to sophisticated ones. They can be freely used for digital content creation without consideration of copyright issues.

To conclude, there is a demand for creative production among the sample. However, the insufficient level of digital competencies is the main obstacle on the way to digital content creation. Digital competencies comprise such essential points as: basic computer and Internet skills, awareness of digital content formats and sizes, knowing which software is appropriate for specific creative purposes and where to find it and, finally, one of the major issues is the awareness of existing digital content licences.

Resources can be distributed under alternatives to proprietary licences, such as General Public License or other licences approved by the Open Source Initiative (OSI). The OSI is actively involved in Open Source community-building, education and public advocacy to promote awareness and the importance of non-proprietary software. The growing community of non-proprietary software is aimed to promote creativity, collaboration and exchange in the public domain²². Raising the awareness of its existence will contribute to an increase in digital literacy among the general public and thus to a better overall quality of shared content. It can help many to find a way into creative expression and participation in digital culture.

²² Non-proprietary licences and resources are dealt with in Chapter 4

Chapter 6: Building Digital Competencies: Qualitative study of a group of participants working with the GIMP

Familiarity with ICT is the indispensable grammar of modern life. ...Increasingly, the information provided [via ICT] so quickly will be a gateway to opportunity in every aspect, from offering competitive prices for goods to offering access to better healthcare and leisure and cultural resources. It offers vital weapons for democratic empowerment and civic activism (Wills, 1999:10).

As we have learnt from the previous chapter, the global computerisation and expansion of the Internet from the mid-nineties led to a technological revolution that had a large-scale effect on different aspects of our culture. New technologies and global interconnectivity are affecting the way we live. Traditional forms of cultural production, information distribution and communication are shifting to computer-mediated forms. Computers have become deeply embedded in our society; this has opened a new dimension of a non-material, digital reality where a new cultural phenomenon has emerged - the 'digital culture'.

With the increased inclusion of computer technologies and the Internet into the fabric of our life, the ability to use these technologies for communication and information-searching has become a necessity in society. Information technology is transforming almost every aspect of modern life: the way people learn, work, communicate, organise their everyday activities and leisure. With the Internet becoming ubiquitous, new patterns of social interaction, everyday creativity and self-expression have emerged. The diverse online services and networks that are aimed at mass participation shape new forms of communication that go far beyond the traditional, mainly textual-based, ways of information exchange. New pieces of computer and mobile technology are produced with even more functionality for the capturing and editing of multimedia content. Society is adopting new technology and the new language of communication it brings with it. If previously, describing something on the phone would take a long time and still generate a very subjective image of the event or an object; today, it takes a few seconds to take a photograph or a video and send it immediately by e-mail or share simultaneously with all 'friends' within a social network. The new-media digital landscape enriches our lives with

tremendous opportunities for creative self-expression, media production and sharing - as well as collaboration with others. The 'new' in new media is the active consumerism, when consumers become users and media creators themselves. However, the vast expansion of new-media technology over the last few years seems to have outstripped some people's capacity to keep up with its potential.

Taking into account the participatory shift in new media, it is necessary to reconceptualise the 'digital divide' - a term which has traditionally been used to describe the differences in access to digital technology. 'Access' is another term that deserves a definition in the new-media context. A distinction needs to be made between the physical access to technology and its effective use. Selwyn (2002) introduced a staged model of the digital divide which ranges from people who have 'formal access', which means the physical availability of technology, through to the level where people are meaningfully engaged with ICTs to achieve personal goals. Today, the physical access to computers and the Internet is not a major concern due to the low costs of the technology as well as the free access granted by many public institutions such as libraries and educational facilities. However, providing access to technology does not necessarily lead to people using that technology in a relevant and efficient way. Although the advantages of new-media technology are theoretically accessible to everyone and many seem to cope with it successfully, a significant part of society struggles to catch up with the rapid technological developments.

Just to name a few examples, a three-year study²³ run by the British Library on the research behaviour of doctoral students of "Generation Y" revealed that that only a small proportion of those surveyed are using technology such as virtual-research environments, social bookmarking, data and text mining, wikis, blogs and RSS-feed alerts in their work. Just under half of those polled used RSS feeds and only about 10 per cent used social bookmarking, with Generation Y students exhibiting the same behaviour as other age groups. This contrasts with the fact that many respondents professed to find technological tools valuable. In fact, many people still prefer more

²³ Researchers of Tomorrow: A three-year (BL/JISC) study tracking the research behaviour of 'Generation Y' doctoral students. A summary of the 2009 findings is available under:
http://www.efc.co.uk/projects/researchers_of_tomorrow.jsp (accessed on 20.09.2009)

conventional forms of communication such as e-mails and phone calls and are very slow in adopting participatory online tools.

The contemporary digital divide is a complex phenomenon that does not divide society into those who have and have not the access to new-media technology. Instead, reconceptualising the phenomenon in new-media terms it is more relevant to talk about *digital inequality* due to the existing differences in access to and engagement with the digital technology.

The expansion of new media has led to the emergence of a networked society based on 'informational capitalism' (Castells, 1998) where the value is made from producing knowledge rather than material goods. The new, decentralised, knowledge economy is enabled through the co-operation between different parts of the global network (Grant, 2007), which is the key feature of a new, networked, social structure (Castells, 2000). Castells (2000) also emphasises that a meaningful and effective engagement with information technologies is essential for participation in the 'network society'. The network-enabled new forms of communication induced 'the shift of the public sphere from the institutional realm to the new communication space' (Castells, 2007) that Volkmer (2003) defines as 'the incipient global public sphere'. To recap, Habermas claims that 'the public sphere cannot be conceived as an institution and certainly not as an organisation and can only be described as a network for communicating information and points of view (i.e. opinions expressing affirmative or negative attitudes)' (Habermas, 1996:360). Castells (2007) expands his definition of the public space beyond the space of communication. He sees it as an expression of a new historical stage that gives birth to a new form of society. New-media participation, collaboration, peer-support and creativity are among the key features that characterise the new form of the global society that grows around the digital networked technologies.

However, the varying levels of new media competencies in the society lead to unequal access to the online public sphere. Many adults have not experienced training in acquiring the skills necessary for the effective use of the new-media technology. Today, some schools and adult education institutions have started teaching new-media literacy in order to bridge the 'participation gap' in the online culture. Although this can help to diminish the gap, certain inequalities will remain, caused by the differences in curriculum, as well as in the technology used and the choice of software applications. As

long as there is no unitary governmental programme of new-media education across different levels of the population, digital inequality and exclusion will remain as an impediment to innovation and progress.

Digital inequality is a multi-levelled phenomenon that leads to social inequality. Hence, understanding the digital inequality can help to evaluate the mediating factors and find possible solutions to diminish the differences of access to, and participation in, the 'digital culture'. In order to bridge the digital inequality, it is essential to understand the obstacles that prevent people from adopting the new digital technology and the opportunities it offers. It is necessary to search for possible solutions to facilitate self-learning and increase new-media competence in society.

Digital competencies

If we look back on another technological revolution that led to the introduction of the printing press in 15th century Europe, we see that, along with a democratisation of knowledge and information explosion, it split the society into literate and analphabets. Similarly, the increased integration of digital technologies into modern life requires a new set of competencies – the digital literacy. Institute for Prospective technological Studies (IPTS) summarised in their policy brief key messages from recent IPTS research relating to the needs for digital competence for the purposes of work, leisure and learning in the European Information Society.

According to this report,

Digital literacy consists of the ability to access digital media and ICT, to understand and critically evaluate different aspects of digital media and media contents and to communicate effectively in a variety of contexts. Digital competence, as defined in the EC Recommendation on Key Competences (EC, 2006) involves the confident and critical use of ICT for employment, learning, self-development and participation in society. This broad definition of digital competence provides the necessary context (i.e. the knowledge, skills and attitudes) for working, living and learning in the knowledge society (Ala-Mutka et al., 2008:4).

For IPTS, digital competence does not automatically follow from the ability to use ICT tools. It encompasses other areas of knowledge related to security and privacy, ethical and legal use, a critical attitude in creating and using content.

Digital literacy is part of a far more complex and contested term – the media literacy. Earlier, media literacy had been defined as ‘the ability to access, analyse, evaluate and create messages across a variety of contexts’ (Christ & Potter, 1998:7). This definition, proposed by the USA’s National Leadership Conference on Media Literacy (1992), is widely cited. However, with the expansion of communication and information technologies it is important to focus on new forms of literacy, which include computer and Internet literacy. There is no unitary definition of the set of new literacies that belongs to the new age of digital culture that is currently in its early evolutionary stage. The general agreement from the 21st Century Literacy Summit²⁴ Report is that, while the underlying concepts are ‘informed by work in media literacy, semiotics, iconography, visual cognition, the arts and other well-established fields, they emerged so recently that they lack a body of literature or theory that can provide adequate definitions, taxonomies or ontologies’ (New Media Consortium, 2005:2).

In 2005, the New Media Consortium²⁵ offered a definition of twenty-first century literacy in which it is described as ‘the set of abilities and skills where aural, visual, and digital literacy overlap. These include the ability to understand the power of images and sounds, to recognize and use that power, to manipulate and transform digital media, to distribute them pervasively, and to easily adapt them to new forms’ (New Media Consortium, 2005:8).

The definition proposed by the European Commission’s Audiovisual Media Services Directive²⁶ uses similar terms, further individualising media literacy and adding the protection factor to it. Media literacy is described as:

²⁴ The summit, which was facilitated by the renowned visual facilitator, David Sibbet, was intended to spur the expansion of visual, aural, and digital literacy awareness and programs across K-12 and higher education globally. The “Global Imperative” report is available on the webpage of the project: <http://archive.nmc.org/summit/> (accessed on 02.11.2007)

²⁵ The New Media Consortium (NMC) is an international not-for-profit consortium of learning-focused organizations dedicated to the exploration and use of new media and new technologies (www.nmc.org).

²⁶ EU’s Audiovisual Media Services Directive (AVMSD) governs EU-wide coordination of national legislation on all audiovisual media, both traditional TV broadcasts and on-demand services.

...skills, knowledge and understanding that allow consumers to use media effectively and safely. Media-literate people will be able to exercise informed choices, understand the nature of content and services and take advantage of the full range of opportunities offered by new communications technologies. They will be better able to protect themselves and their families from harmful or offensive material. Therefore the development of media literacy in all sections of society should be promoted and its progress followed closely (Commission of the European Communities, 2007).

Street describes the new-media literacy not only as acquisition of skills, but as a social practice, which 'entails the recognition of multiple literacies, varying according to time and space, but also contested in relations of power' (Street, 2003:77). On this account of understanding, new-media literacy is not a pre-defined set of knowledge and skills that an individual needs to possess in order to participate in the technology-driven social life. It is better understood as a multi-level literacy, consisting of the various literacies required for modern individually-shaped social interaction, cultural participation, creativity and self-actualisation. The new-media literacy is distinguished through its participatory and creative aspects, whereby, according to Livingstone, content creation is now recognised as a crucial area of adult new-media literacy (Livingstone *et al.*, 2005). It is a crucial element of contemporary culture and the technological and social competencies of people define the extent of their democratic engagement with new media. 'Media literacy contributes to the critical and expressive skills that support a full and meaningful life, and to an informed, creative, and ethical society' (Livingstone & Graaf, 2008:3).

Susan Marcus, one of participants in the 21st century Literacy Summit (2005) points out the important role of 'visual literacy' as a basic component of new-media literacy:

Because images are such a strong component of digital media, "visual literacy" is called for from some fronts. And because this flood of imagery has been largely driven by technology (TV, computers and videogames ... think screens), and because the computer is an available and straightforward medium to mix and

manipulate images, video, words, sounds, etc. ... it is often seen as both the medium, i.e., the “carrier, ” and the tool of choice for learning (Marcus, 2005).

The author argues that the ‘language’ of imagery (and sound) is one of the very basic symbol systems with which to learn, utilise and invent. The grammar of the language of new media has to be learnt by the majority of people, however, it seems to be grasped intuitively by the young. ‘As young people create casual multimedia, they are also creating the opportunity to experiment, learn, take risks, and become fluent’ (Woolsey, 2005). The power of the new literacy is in its interactivity, immediacy, multimodality and new dimensions for self-expression and learning.

“Higher order thinking skills” represent abilities to imagine and create with the symbols, to synthesize information, to solve problems by designing and inventing with the symbols. These kinds of thinking skills are a stated goal of the current “new literacy” discussions in regard to images (and sound) (Marcus, 2005:5).

Furthermore, Marcus stresses the importance of thinking skills for a conscious use of media and argues that they need to be practised in a variety of media, not just digital, so that creativity and fluency can be built as a potent thinking skill. I agree with Marcus’s arguments based on the importance of the development of thinking skills. However, I argue, that this development is best carried out through the initial practice of new media handling. People learn to understand the ‘alphabet’ of new media through making the media themselves. As children learn to read and write through hours of practice, so it is essential to use the digital media in order to understand them and acquire the new skills of 21st century literacy.

The emerging practices of bottom-up media production or, as Jenkins (2006b) calls it, ‘participatory’ culture, require new skills and knowledge that enable the use of modern communication channels. Participatory culture requires competencies, which are built on ‘the foundation of traditional literacy, research skills, technical skills, and critical analysis skills’ (Jenkins, 2006:4). Modern literate persons are expected to be able to communicate online, to do research on the Internet, to modify and share data, to produce their own content and make it available to others. ‘The ability to use a computer

is assumed to be a cornerstone of effective citizenship in the Information Age' (Selwyn, 2005). With the shift to the new-media forms, communication is becoming more obvious, new competencies are set as a social standard.

Promoting the digital competencies

This research finds the grassroots creative activities that utilise digital media of particular interest. Therefore, the focus is on 'informal creative literacies' (Burgess, 2007) that go beyond computer and internet skills to encompass knowledge about creativity support tools as well as the ability to use them for everyday creativity and self-expression. Jean Burgess defines this kind of literacy as 'vernacular', which is 'the range of everyday competencies that constitute what people already "do" creatively, and the local, social contexts in which those practices are embedded' (Burgess, 2007:98). For her, 'vernacular creativity' is especially relevant at moments of media transition such as the one we are experiencing today. The early process of technology adoption and the acquisition of new skills and practices usually take place in an informal environment, through self-learning or with the help of family and friends. Later, with the implementation of technologies in society, the established media practices become increasingly integrated into the curriculum of educational institutions.

The majority of projects that are aimed at teaching digital competencies target children and young people in education. Similarly, the few academic researchers who investigate the new forms of literacy focus mainly on developing new strategies for teaching digital literacy in educational institutions. However, as Sonia Livingstone (Livingstone & Graaf, 2008) notes, the hardest to reach are adults that are not undertaking formal education. As the Ofcom survey (2008) revealed, a significant percentage of people do not feel confident to use the new technology and need external help to raise their interest and confidence in using new media. Some of these people strive to participate in media culture, but they are lacking the knowledge and skills to do so. A smaller group of sceptics needs first to be convinced of the benefits of the technology they are currently missing. Many of the 'technology resistant' are afraid of the apparent complexity of the software and hardware use. These people need a reason to

try out the new-media technology themselves in order to overcome the barriers that prevent them from using it.

In the survey of adult media literacy conducted by Ofcom in 2008, the researchers divided the online population into five sub-groups according to the level of engagement with new media. 'Engaged' and 'Pragmatists' with 20% and 30% of the sample respectively, are young to middle-aged confident media users with a sufficient level of media literacy which they successfully apply to different devices. The third, rather small, group of 8% are 'Economisers' who also tend to be younger, have a positive relationship with the media, but who are limited by costs, whether perceived or actual. For Ofcom, this group needs support to ensure their confidence in media use. One-third of the sample was revealed to be 'Hesitants' who, despite their awareness of missing the advantages of technology, dismiss it due to a lack of confidence. A smaller group of 9% are 'Resistors' who display little to no interest in technology and show no intention of changing this situation. The latter two groups mainly consist of over-45-year-olds, many of whom are not working. Any media literacy support will need to first provide a reason for this group to become interested in another, or a new, device. Ofcom stresses the need to support these people, build their understanding of new-media technology and give them confidence in using it.

Sonia Livingstone (Livingstone & Graaf, 2008), one of the leading researchers in the field of media literacy, stresses the importance of developing strategies in order to reach people outside the formal educational system in order to promote media literacy. There is no established unitary programme for adult users to help them with technology adoption and the acquisition of new skills. Therefore, the levels of media literacy and computer skills vary tremendously across society which leads to digital inequality – unequal access to technology and information and, as a result – to partial social exclusion (Hills *et al.*, 2002). This phenomenon is being discussed widely in the academic literature as well as in the popular press. Initially, the digital divide was seen as a simple issue of 'having' or 'not having' access to the Internet and computer technology. This definition is too limited. Today, it is not a matter of physical access, as computer and Internet technologies have become widely available, but an issue of lacking the abilities and skills that are necessary to use the communication technology on an up-to-date level. The dominance of electronic services scares an unskilled user

rather than motivating him or her to apply them. Today, researchers define the digital divide as a complex of interlinked processes that contribute to the exclusion of people and groups within a society or community (Hills *et al.*, 2002). A variety of factors can influence the digital exclusion, such as individual differences, social contexts, national or even global structures (Burchart *et al.*, 2002). However, the lack of digital literacy is the major obstacle on the way to a fulfilled life in the digital age.

It is a fact that the state does not provide enough resources for everybody to acquire new knowledge and skills to increase media competency. Some educational institutions have started integrating new media into the curriculum, but often the lack of staff able to teach such courses hinders innovative efforts. The few existing adult education computer classes are not affordable for everyone and are often limited to teaching basic computer skills such as the Internet and office applications only. As a result, many people remain in the sidings whilst the express train of digital culture is rushing by.

The existing research on the new forms of literacy is mainly focused on children rather than on adults and formal expectations regarding adult media literacy are rarely formulated (Livingstone & Graaf, 2008). According to Livingstone and Graaf (2008), there have long been attempts at promoting audiovisual, computer-based and online literacies in education. However, in many cases, media literacy is understood 'as a means of inoculating children against the potential harms of the media or as a means of enhancing their appreciation of the literary merits of the media' (Christ & Potter, 1998). Another policy initiative concerns the efforts made to secure media and communication regulation. In the UK, the responsibility for media literacy promotion was placed on Ofcom by Section 11 of the Communications Act, 2003²⁷. Ofcom's regular research reports on the UK online population's habits and needs are aimed to raise awareness of digital inequality and the importance of new-media literacy in modern society.

One of the crucial prerequisites for promoting new-media literacy and bridging the participation gap outlined by the 21st century literacy summit was the broad availability of tools for creating and experiencing new media. It was stressed that 'access to tools that empower expression in these new forms must be as ubiquitous as word processing

²⁷ <http://www.legislation.gov.uk/ukpga/2003/21/section/11> (accessed on 14.02.2009)

software or spreadsheets'. Warlick (2004), in his book "Redefining Literacy for the 21st century", argues that in order to teach students to teach themselves, it is essential to provide them with tools and information that facilitate learning. Ubiquitous access to computers and networked data is a prerequisite for self-development.

IPTS in its brief policy points out to the importance of including digital literacy in formal and informal educational curricula. For them, education should start building digital competencies as early as possible 'through learning to use digital tools confidently, critically and creatively' (p.6) but also enable all parts of population to acquire the digital literacy through lifelong learning and workspace training (Ala-Mutka et al., 2008).

Ala-Mutka et al. (2008) emphasise that approach do digital literacy should be dynamic and regularly adapted to emerging technologies and their adoption. 'The concept of digital competence is re-shaped by the emergence and use of new social computing tools, which give rise to new skills related to collaboration, sharing, openness, reflection, identity formation and also to challenges such as quality of information, trust, liability, privacy and security' (2008:6). Therefore, the concept of digital literacy in education is subject to a permanent change. Apart from the formal education and lifelong learning, IPTS points out to the need to develop resources that promote awareness of informal learning opportunities through participation in online communities and using online resources for self-learning. They propose sites for specific target groups that can be shared between informal learners as a possible solution (Ala-Mutka et al., 2008).

According to the data from the online survey described in previous chapter, the majority of people who do not use the online resources for creativity and learning do not know where to start and require assistance. They need guidance to learn about the available tools and opportunities as well as how to use them. Lifelong learning and community colleges offer ICT courses for adults. However, these courses are usually aimed at teaching basic computer and the Internet skills and specific computer programs and not how to proceed with self-learning and acquisition of new knowledge. These courses also have a certain duration and are not free-of-cost. In my view, there should be more easy opportunities for interested people to learn about available opportunities for self-expression, creativity and learning. I support the 'learning by doing' model,

especially in adult education. New-media participation is often a question of motivation and confidence to use the technology. Therefore, in my study I explore the ways to help people with at least basic computer skills to engage with digital technologies through the use of software-based, creativity-support tools.

In the qualitative experiment described in the following part of this chapter participants learned how to do basic colour, cropping and retouching operations in GIMP, a Photoshop-alike, open-source, image-editing tool in a single-day workshop. After the workshop, all the participants stated that image-editing was revealed to be much easier than they had thought and that they would be able to use the tool in the future with the help of the online manual and tutorials. Some of the participants continued to use the tool and acquired new knowledge through online resources they learnt about in the workshop. This case illustrates that a guided 'hands-on' practice is one of the most successful ways to reduce fears and build confidence in adults' new-media use.

Qualitative study of a group of participants working with the GIMP

The ability to use information and communication technology (ICT) is nowadays assumed to be a prerequisite for a fulfilled life in the information-based age.

New-media technology is expanding dramatically introducing more capable and sophisticated products with a wide range of functionality often combined in a single device. The wide availability of fast broadband connections in the majority of homes and institutions, the growing number of mobile internet providers who offer their services at affordable rates - all this leads to a hyper-connectivity and a constant flow of communication between computer and mobile technology users independently of their location. Today, communication is increasingly utilising various media channels simultaneously. The Internet is daily filled with terabytes of user-generated content: images, video-footages, animations, sounds and texts. The modern communication patterns require not only computer and Internet knowledge but also skills for creating and manipulating digital content.

The survey described in the previous chapter had the aim of investigating the role of everyday creativity and the extent to which people use computers for their creative activities. The survey also explored people's willingness to engage with digital culture, to produce and share content and to acquire new skills for media handling. Some major obstacles that prevent many from doing so were also evaluated. The quantitative part of the current research project confirmed the assumptions that creativity is an important part of modern society's life and that technology plays a big role in everyday creativity. Moreover, an intimate correlation has been established between the self-evaluated creativity level of participants and the use of information technology for creativity support. The more creative the participants saw themselves, the more they used computer technology for their creativity. The majority of survey participants showed an eagerness to learn to become more creative with the help of computers and acquire advanced skills for digital content creation and manipulation. Theoretically, most of the participants realised the wide range of opportunities for creative engagement that were possible through information technology and the Internet. However, the lack of confidence in trying out new tools, insufficient knowledge about the available creativity software and its licences, the low level of digital competency – all these factors were

major barriers for many on their way towards inclusion in digital culture. Especially among the older adults, there was a growing concern that they need to engage with digital technologies in order not to be excluded from an increasingly digital, contemporary society. As Green and McAdams reason, ‘to lag in the use of technology is to remain behind a veil of limited knowledge and opportunities’ (Green, McAdams, (2003:8).

New-media education and access to information might help to bridge the participation gap and help many of the disadvantaged to play a part in the digital culture. Therefore, the qualitative part of this research project aims to explore whether the use of free and open source creativity support tools can help ‘ordinary’ computer users to build their confidence and acquire the skills that enable their participation in new-media environment.

Modern information and communications systems, including digital developments [...] can minimise the constraints of time and space: people can learn or gain information about what is available, whenever and wherever they wish – providing they have access to modern technology and the confidence to use it (Welsh Office Education & Training Group, 1998: 30).

Today, access to information technology involves not only physical availability but, more importantly, the skills required for using the technology. ‘Access to ICT and confidence in its use in turn opens up access to knowledge and a better chance of gaining and keeping a job’ (DfEE, 2000b:12). Digital technologies offer numerous opportunities for learning, acquiring new skills and creative expression for people of any age and background. Taking advantage of these technologies contributes to personal fulfilment and self-actualisation which form the highest level of Maslow’s hierarchy of human needs²⁸ (Maslow, 1943).

However, not everyone is capable of acquiring new knowledge and skills through research and self-learning. The information about the free available resources should be

²⁸ Maslow's (1943) hierarchy of needs is often displayed in the shape of a pyramid, with the largest and most fundamental levels of needs at the bottom, and the need for self-actualization which includes morality, creativity problem solving, etc. on the top. Maslow describes self-actualization as a person’s need to realise and fulfil own potential.

in the media. School and adult education curricula should teach new-media literacy, which involves the basics of using the new-media technology, including the licensing and copyright issues.

The Government's priority is to provide people with the skills to play a full part in the Information Age, to take part in learning and so make the most of themselves ... The goal is for people to learn how to use ICT to enrich their lives, improve their skills and make full use of the technologies in the Information Age (DfEE, 2000a:8).

Blunkett (1999:41) argues that 'lifelong learning can enable people to play a full part in developing their talent, the potential of their family and the capacity of the community in which they live and work'. Free and open digital tools and online resources offer a wide spectrum of opportunities for self-learning, experience exchange and creativity for users of all ages and professions.

However, there are several barriers that prevent many people from taking advantage of the opportunities offered by the information technology. A significant proportion (87%) of the survey (Chapter 5) participants stated that they would use computers for creativity if they had the necessary software and skills. Commercial programs for creativity support are often not affordable for an ordinary user. As a result, people have no choice but to use pirate products or not to use the tools at all. Due to the dominance of the widely advertised commercial software products, free and open source alternatives are usually less known among the general public. It is not in commercial software manufacturers' interest to allow the wide promotion of the non-profit, user-centred, free and open source community. Nevertheless, its rapid growth and increasing popularity speak for themselves.

As could be derived from the survey described in Chapter 5, although specific open source applications, such as Mozilla Firefox, Thunderbird or Open Office, are widely used, the underlying concept of freedom to use, to modify and to share that distinguishes these tools remains hidden from the majority of users. The awareness of existing licences for digital content is an important part of digital literacy. This knowledge allows the user to modify and distribute content legally if it is published under an

appropriate licence such as the 'Creative Commons' or 'GNU General Public License'. Numerous software applications are available as free or open source software (FLOSS)²⁹ ranging from the simple and easy-to-use to the powerful that are suitable for professionals. The majority of these tools can be downloaded from the web at no cost.

Creativity support and multimedia handling is an especially well-developed domain of FLOSS with programs designed to work with images, sound, video and motion graphics. If previously the tools were often provided with poor documentation, today, extended manuals and tutorials are available online. Committed users from all over the world share their experience with others posting e-lessons, tips and tricks on the web. Despite the growing number of high-quality, free resources for creativity and learning they often remain undiscovered by general computers users due to the lack of information about these possibilities. However, the Mozilla Firefox and Open Office projects proved that in some cases it is word-of-mouth advertising that brings FLOSS to the masses.

I see considerable promise in the free and open source communities as a domain that facilitates acquisition of new skills and building the confidence to engage with digital culture. Among the wide range of creativity support tools available today, a suitable one can be found for almost every creative need. A significant advantage of using these free and share-alike licensed tools is in the online community of users and developers that grows around the tool allowing people to communicate, help each other, share techniques and experiences and work together on the tool's further development. The whole idea of the free and open source movements is grounded in collaboration and the free flow of data. Therefore, a user is never alone with his or her piece of software, but becomes a part of a community. This is extremely helpful for self-learning as well as for building the confidence and the will for creative experimentation. Free and open-source concepts of freedom and peer-support need more promotion among the general public. The free opportunities for learning and creative expression, as well as for many other digital activities, need governmental support to help people to make full use of them.

²⁹ The FLOSS - Free/Libre/Open Source movement and the alternatives to commercial types of licences are described in Chapter 4.

The survey described in previous Chapter confirmed that there is an interest in using the digital technology for everyday creative practices among the majority of survey participants. The survey analysis also proved that the lack of digital competencies is one of the major barriers that prevent many people from engaging with the digital technology for creative purposes and self-expression. The survey data has revealed that digital photo-manipulation and editing are the most popular and the most wanted creative activities among 'ordinary' computer users. A significant number of participants also stated that their first priority was to learn advanced image-manipulation and retouching techniques.

The second phase of empirical study is aimed to investigate the possibility of using the GIMP, a freely distributed open source image editor, by non-professionals for simple image processing.

The Aims

A group of people with no professional knowledge of using image editing programs participated in a single-day workshop where they learned how to do basic image processing with a free software editor, the GIMP. The main goal of this practical training was to make participants familiar with the GIMP and its functionality, to let them try it out in a hands-on experience as well as to provide information about corresponding communities of practice and learning resources so that participants can use the tool independently and apply it to their own creative practices.

The secondary aims were:

- to explore whether the GIMP is suitable for use by non-professionals for basic image editing operations,
- to see if a single session can provide participants with enough basic skills, confidence and motivation to maintain the practice on their own,
- to find out if the information about the freely available online learning opportunities and supporting communities could motivate participants to acquire new skills through the use of online resources and participation in online communities of practice.

Methodology

A qualitative, mixed-method approach has been used in this study in order to achieve the desired objectives. Data collection methods involved questionnaires, observation and follow-up telephone interviews.

In the present study, an open source Image-editing program, the GIMP 2.6, was introduced to a group of adults of mixed age, gender and background.

The qualitative experiment aimed to explore the following questions:

- What is the experience that non-professionals have when learning to use the open source image-editing program, the GIMP?
- How do participants respond to the graphical user interface of the tool?
- In what ways do participants cope with the individual tasks of the session, their difficulties and successes?
- What is the effect of the hands-on workshop on people's confidence and motivation in using the GIMP and other free and open source software for everyday creative practices?
- What are the implications for the acquisition of new skills and learning through the use of online resources and participation in communities of practice?

Experience is defined as the when, why, where, and how of each participant's interaction with the program and engagement with the task. Specifically, experience involves participants' behaviour, as well as affective responses to challenges and successes during the session. Non-professionals in this context means computer users with little to no previous experience of working with the GIMP and other image-editing programs. Challenges and successes are defined individually by each participant in the study. Confidence is defined as the opposite to fear and uncertainty in using new-media technologies. Motivation refers to using the GIMP and other free and open source creativity support tools in the future.

Research design

Research methods can be classified in various ways; however, one of the most common distinctions is between qualitative and quantitative research methods (Myers, 2009). These two approaches differ in their aims and subjects of study. Myers (2009:8)

distinguishes that qualitative research is an in-depth study of social and cultural phenomena and focuses on text whereas quantitative research investigates general trends across a population and focuses on numbers. Likewise, Miles and Huberman (1994) maintain that qualitative research focuses on an in-depth examination of research issues while Harrison (2001) argues that quantitative design provides a broad understanding of issues under investigation. Qualitative research methods were developed in the social sciences to enable researchers to study social and cultural phenomena (Myers, 2009). This approach is designed to help researchers understand people and the social and cultural contexts within which they live. Qualitative data sources include direct observation and participant observation (fieldwork), interviews and questionnaires, documents and texts, and the researcher's impressions and reactions (Myers, 2009). Kleinig (1986) introduced a qualitative form of experimental research that focuses on collecting less-structured qualitative data in experimental settings. If quantitative research is measuring and testing, the qualitative approach focuses on non-numerical data through observing/listening and interpreting (Tesch, 1990). Qualitative research offers a deeper understanding of a phenomenon, and therefore it is often used in combination with a structured quantitative design.

In this research, a mixed-method approach with a wide-scale quantitative survey (described in the previous chapter) in the first part and a quantitative experiment in the second is used. The quantitative data on the habits, attitudes and beliefs of the respondents was collected through the online survey. However, despite the inclusion of some open-ended questions in the survey, a quantitative approach has a limited explanatory power. Therefore, a set of qualitative methods has been used to gain deeper insights into how findings work and how they can be translated into practice. Condelli and Wrigley (2004) argue that the quantitative methods can tell us what works, while the qualitative methods can tell us how it works.

In the qualitative part of the current research, the focus is on an in-depth investigation of the behaviour of a group of people in their interaction with the GIMP - a free software creativity support tool. The qualitative data collection focused on the feelings, reactions, attitudes and self-reflection of the study participants rather than on numerical data. The range of qualitative methods included a pre-session questionnaire, a qualitative experiment with observation as a data-collection method, a post-session

questionnaire and telephone interviews. The research design of the qualitative part of the main study, including the use of the methods, is elaborated on further in this chapter.

The qualitative approach offers certain flexibility in data-collection procedures, whereby the methods are constantly adapted and refined during the process of investigation (Creswell, 2003). According to Creswell (2003), qualitative researchers look for involvement of their participants in data collection and seek to build rapport and credibility with the individuals involved in the study. In this study, the self-reflection of participants is an important part of data-collection procedure.

Creswell (2003), building on the thoughts of Rossman and Rallis (1998), defines several major characteristics of a qualitative inquiry. He sees qualitative research as a, participatory, self-reflective, emergent multi-method rather than one that is prefigured and interpretive.

Qualitative research is fundamentally interpretive. This means that the researcher makes an interpretation of the data. This includes developing a description of an individual or setting, analyzing data for themes or categories, and finally making an interpretation or drawing conclusions about its meaning personally and theoretically, stating the lessons learned, and offering further questions to be asked (Wolcott, 1994). It also means that the researcher filters the data through a personal lens that is situated in a specific socio-political and historical moment. One cannot escape the personal interpretation brought to qualitative data analysis (Creswell, 2003:182).

Many strategies for conducting a qualitative inquiry exist. For instance, Tesch (1990) identified twenty-eight different qualitative approaches. Stake (2010) lists observation, interviewing and examination of artefacts as the most common methods of qualitative data collection in social sciences and psychology. Qualitative methods are distinguished through their flexibility. They need to be adapted and eventually mixed or combined with other methods to serve the purposes of a specific study.

The Qualitative Experiment

Today, qualitative methods are becoming increasingly used within many domains of scientific research and especially in psychology, sociology, fine arts, design, history and philosophy. Thus, in Human-Computer-Interaction (HCI) research, alongside known qualitative and quantitative methods, one method - known as the qualitative experiment - is widely used. The qualitative experiment has been formally defined for the disciplines of Sociology and Social Psychology through Kleining's analysis of scientific methods as derived from everyday life and from the interaction of the researcher with the object of research (Kleining, 1986). Kleining (2000) sees qualitative research as a dialogue between the researcher and the research subject rather than as a linear process: a qualitative dialogue is not one of authoritarian criticism, but an egalitarian one (Kleining, 1986:734). The author argues that the dialogue adapts the epistemological structure of the researcher to the phenomenon of study thereby building conformity with itself (Kleining, 2000). Kleining (1986) defines the qualitative experiment as the intervention with relation to a (social) subject which is executed following scientific rules and towards the exploration of the subject's structure; it is the explorative, heuristic form of an experiment.

Experimental research has a long tradition in different fields ranging from science to psychology and education. According to Myers (1980), the design is the general structure of the experiment, not its specific content. Habermas (1972) describes experimental research as a postpositivist system of inquiry appropriate for investigating causal relationships between variables – governed by predictable laws. Quantitative experimental research aims to identify the cause and effect relationships of a specific treatment. It is usually run in controlled settings with specific treatment and measurement procedures that seek to test the hypothesis. In contrast, a qualitative experiment implies a qualitative type of inquiry and therefore aims to discover structures, circumstances, relations, connections and dependencies of the subject of the research. In traditional qualitative research, a phenomenon is usually investigated in its natural environment (Creswell, 2003). In a qualitative experiment, qualitative measures are applied in an experimental setting, an environment designed or selected for the purposes of the study.

Qualitative experiments do not seek for relationships between factors, but rather look for the factors, processes and structures which may include any possible dependencies and relationships, not only causal ones (Ravasio *et al.*, 2003). Qualitative experiments can be used not to test, but to build upon and complement existing models and theories or to prepare the ground for further studies. For this reason, Ravasio *et al.* (2003) describe a qualitative experiment as particularly useful for the domain of Human-Computer-Interaction, where new technologies are often a new terrain to be investigated without previous knowledge upon which to draw. Usability testing and user experience evaluation is especially valuable for free and open source software that is usually being developed through trial and error and without thorough research. Usually, the user community is actively involved in the development process. Those capable of programming extend the basic version of the software with additional capabilities. Other users are encouraged to report problems and wishes to the developers.

In this study, a qualitative experiment has been chosen as the most appropriate method that allows investigating participants' behaviour during their interaction with an open source, image-manipulation tool in experimental settings.

Observation

During the qualitative experiment, observation was used as a method for qualitative data collection. The SAGE Encyclopaedia of Qualitative Research Methods defines observation as one of the oldest and most fundamental research method approaches. It involves 'collecting impressions of the world using all of one's senses, especially looking and listening, in a systematic and purposeful way to learn about a phenomenon of interest' (Given, 2008:573). Observation as a method of data collection is defined by Marschall and Rossman as the 'systematic description of events, behaviours and artefacts in the social setting under study' (Marshall, Rossman, 1989:79). In common with other qualitative methods, with observation there is a commitment to try to understand the world, better, usually from the standpoint of individual participants (Banister *et al.*, 1994).

Qualitative observational research is exploratory. It seeks to uncover unanticipated phenomena. It uses inductive reasoning with the conceptual constructs used to account for observations being developed during and after data collection from the observed behavior itself. [...] It is constructivist in approach, emphasizing meanings that the participants attach to activities and events (Given, 2008:573).

Qualitative research can be conducted in a laboratory or another setting; also, it often takes place in a natural environment to capture behaviour that occurs in the real world. It usually involves direct contact between the researcher and participants, whereby the subjective role of the researcher is recognised as an important component of the method. The behaviour and reactions that occur during the process of data collection are addressed and expressed through the researcher's reflexivity (Given, 2008).

'Qualitative research is holistic in its approach, with researchers collecting data about many aspects of the research setting and its participants' (Given, 2008:573). However, it is impossible and unnecessary to observe everything in a setting, therefore it is essential to decide which factors are relevant to the study and what has to be observed.

Observation with its flexible design can help to gain deeper insights into less-explored phenomena. It is particularly powerful in combination with other qualitative and quantitative methods. There are two types of observation usually used: the direct or non-participant observation when the data is collected by observing behaviour without interacting with the participants. In participant observation, the researcher participates in the session and interacts directly with participants. The participant observation method is employed to give the researcher a "first-person" understanding of the context and nuances associated with a task and the culture in which that task occurs (Johnston, 2005).

Bernard (2004) includes more than just observation in the process of being a participant observer; he includes observation, natural conversations, interviews of various sorts, checklists, questionnaires and unobtrusive methods. The observation method of direct participation provides researchers with ways to check for nonverbal

expressions of feelings, to determine who interacts with whom, grasp how participants communicate with each other and check for how much time is spent on various activities (Schmuck, 1997). DeWalt and DeWalt believe that 'the goal for design of research using participant observation as a method is to develop a holistic understanding of the phenomena under study that is as objective and accurate as possible [...] ' (DeWalt and DeWalt, 2002:92).

The qualitative experiment described in this thesis had the aim to explore how people with no professional knowledge in image processing coped with using the GIMP for basic image-manipulation. The best method for the objectives of the study was revealed to be a non-obtrusive participant observation. However, the chosen method was known to have several weaknesses. The main disadvantage of observation is 'observer bias'. As defined in the SAGE Encyclopaedia of Qualitative Research, 'this term refers to the ways in which errors may unconsciously occur when gathering and analysing observational data' (Given, 2008:577). The significance of observed behaviour can be influenced by the observer's age, gender, social class, values, schemas, perceptions and expectations. Although some influencing characteristics, such as age or gender, cannot be altered, certain strategies can be used to reduce observer bias. In this study, two observers, a male and a female, observed the same situation simultaneously. They were required to take notes only on specific aspects of participants' behaviour and not to record everything that happened. During the evaluation, the notes of the two observers were compared and joined into one document. This approach helped to cope with another weakness of the observational method – the difficulty of recording the data. Therefore, to ensure quick and easy data collection and that only certain study-related behaviour was observed, the observers used a list with pre-defined categories: difficulties, progress, interaction and experimentation (a more detailed explanation is further in this chapter). The following factors were observed and noted: how participants coped with the graphical interface of the program, how often each participant required help and what kind of problems occurred, the timing and fluidity of the workflow during the task, their motivation to try out other elements or functions of the application as well as participants' personal creative input into the task completion. I also looked at the difficulties and successes of individual participants. Pencil-and-paper notes are not as obtrusive as video or audio recording.

Video recording may disturb some participants and prevent them from feeling and acting naturally. Other experiment recording methods - for example screen capture - were not used in the study. Video-, audio-recording or screen capture would deliver large amounts of data that were not relevant to the goal of the experiment that is focused on participants' behaviour during the interaction with the software tool and their problems and successes during the task completion. These aims are better achieved through observation and participants' self-reflection in the post-session questionnaires.

The data was recorded by two participant observers independently. The paper notes were based on what the observers experienced and learned through interaction with the participants as well as what had been observed. The notes were shared between the two observers, combined and expanded into descriptive narratives shortly after each session.

Participants

Participants were recruited in the adult education centre (community college) where the study took place. The study was advertised as a single day free-of-cost workshop held for scientific purposes which included a questionnaire and interviews. Participants should fulfil the basic requirements: be over 18 years old, have at least basic computer skills and no professional or advanced knowledge in using the GIMP.

The following media were used for advertising: flyers and e-mails distributed inside the host facility to its members. Participants could sign up for the study by contacting the researcher over the phone or by e-mail. The anonymity of participants was guaranteed.

The IT room of the facility had seventeen workplaces available. For this reason, the room was booked on two successive Saturdays to achieve a sample group of at least thirty participants, which is usually seen as an appropriate number for a qualitative experimental study. Participants had the opportunity to sign up for one appointment at either of the two available seventeen-place sessions. This resulted in two groups with 16 and 17 participants respectively. Although, due to the technical restrictions, the participants had to be divided into two groups, the groups received the same treatment and so were regarded as one group. Participants' characteristics are listed in the 'main

study' section of this chapter. In order to preserve anonymity, each participant received a number that was tacked on the monitors of their workspaces. These numbers should also serve data collection through observation to identify individual participants.

Settings

To maintain confidentiality, the participating services in this study have not been named. The services represent a range of adult learning programs including creative arts. The classes are offered at affordable prices with concessions available. Placement in these programmes is subject to eligibility and available places.

The study took place in an IT room of the facility equipped with seventeen MS Windows computers, one main computer with a projector attached to it, a printer, and a blackboard. The equipment had been checked for functionality and the GIMP had been installed on every computer prior to the study.

Two groups of participants with 16 people in the first and 17 in the second took part in the study on two successive Saturdays.

The session was administered by the researcher and one assistant. The assistant had been instructed in study administration and data-collection methods.

Ethical considerations

Prior to the study, every participant had been provided with a complete briefing as well as an oral description of the study. Thus, the participants were informed about the purposes and methods of the study, data collection methods, the procedure and how the data would be used, as well as the possibility for them to terminate the experiment at any time. The informed consent form was signed by each participant. An example of the informed consent document used in the study can be found in the Appendix 2. The study fulfils the requirements of Loughborough University Ethical Advisory Committee.

The Procedure and Data Collection

The data collection of the study comprised four phases: the pre-session questionnaire, observation, the post-session questionnaire and interviews.

Due to the qualitative nature of the experiment, the classical 'single group pre-test – post-test' quantitative approach was modified into a single-group pre-session questionnaire – post-session questionnaire method. In a quantitative study, a group receives the same test before and after a treatment to evaluate the effects. In our case, the focus was on people's subjective experiences, opinions and self-evaluation. Therefore, the aim of the questionnaire that people received at the beginning of the session was to gather demographic and qualitative data concerning participants' epistemology, everyday creativity, computer use for creativity and awareness of FLOSS creativity support tools. After the session, participants were asked to fill in a questionnaire concerned with their experience of the session with the GIMP and their future intentions with the tool. The questionnaires were provided as paper handouts to the participants. Individual respondents were asked to fill in their participant number in their questionnaire form in order to preserve their anonymity.

Phase 1 – Pre-session questionnaire

The questionnaire (Appendix 2) comprised different types of questions concerned with participant's demographic information; his or her attitude to personal creativity; creative activities in everyday life; the role of information technology and the Internet in those activities; general knowledge about creative tools, in particular, the free and open source ones; previous experience of using any creative software and the willingness to acquire the new skills required for digital content production and publishing. This information was required to establish participants' epistemology, habits and attitudes for further comparison with other participants and to reveal possible changes that occur after the session.

Phase 2 – Tutorial and hands-on exercises. Data collection: observation

Presentation and direct Instruction have been chosen as teaching methods as they are often used to help students learn new concepts and skills. 'For behaviourist teaching, the techniques of Direct Instruction suggest a careful progression of introducing a new

topic, presenting it to students, having students practice with guidance (or “scaffolding”), and finally having students work independently’ (Grubb & Gabriner, 2013:18). The theoretical part of the session was taken by the teacher-researcher who, as is common in adult and vocational education, has not received formal pedagogical education, but has a long-term professional experience in the area. The teacher-researcher has attended several seminars and workshops for teaching skills in adult education. The decision to divide the workshop into a theoretical part and a hands-on part should allow participants to concentrate on presentation without the need to follow each step in a limited amount of time and then to move on to practical training that every participant can do at his or her own pace.

The hands-on workshop suitable for a beginner and an intermediate user was designed to enable participants to learn some essential image-manipulation techniques with the GIMP. During the first part of the session, the workflow of the session and the procedures were explained to the group. Then, participants were introduced to the concept of free and open source software, the range of creativity support tools available under free licences as well as some relevant information, tutorials, open educational resources and communities of practice on the Internet.

Thereafter, an overview of the free graphics software - the GIMP - was provided in some detail and its capabilities and the tasks for which it is designed described. This included information about where to find and download the GIMP, brief information on how to install the software and an overview of the interface and the main functions of the program as well as the most common digital image formats. This part took about 20 minutes.

The 30-minute introductory session was followed by a tutorial. The task was to create an electronic Christmas card out of two amateur photographic snapshots and include a text (Appendix 2). Through completing the task, participants should learn the following functions: red-eye removal, the basics of working with layers, retouching, removing unnecessary objects, the use of brushes and transparency, working with text, cloning, colour saturation, lightness and contrast and saving in different file formats. The cropping and resizing of images was introduced at the end of the tutorial as optional operations. Each step of the task was first demonstrated and explained to the group. The tutorial consisted of ten basic and two optional operations. Prior to the session,

participants received handouts with a detailed explanation of each step of the tutorial and the task (Appendix 2). Using the sheets during the presentation should make it easier to distinguish individual steps of the tutorial, to bring more structure to the new information and to link it to the subsequent hands-on training.

During and after the presentation, participants were encouraged to ask questions if something was not clear to them. During the theoretical part of the workshop, participants remained sitting at their places as they were listening and watching a big projection of the presenter's screen. The step-by-step tutorial took approximately 20 minutes. After a 10 minutes break, participants were asked to begin the hands-on training.

The participants were asked to start the GIMP on their computers and to begin with the task. The exercise materials (images, the GIMP manual) were stored centrally on a main computer and could be accessed easily from each desktop over the local network. All participants used the same images from a shared folder in order to make it easier to follow the tutorial and complete the task. Personal assistance was provided in case of questions or difficulties. In this phase, participants were free to ask for help and share the problems they experienced during the process. Participants could communicate with each other and move around the room if necessary. They had 90 minutes to complete the task.

Participant observation

The qualitative data was collected through observation. No video or audio recording took place as it could affect the learning and the creative process. The intention was to let people work in a relaxed atmosphere without any pressure or competition. The focus was on the process rather than on the outcome. The observed data have been captured as handwritten notes, whereby each participant was identified by the number on his or her questionnaire sheet. That enabled a structured data record according to individual participants as well as the whole group.

The practice session was administered and observed by the researcher and one assistant. The assistant had been trained in image-processing with the GIMP and in the basic techniques of observation and documentation required for this study.

To ensure a quick and easy collection of observational data, the two participant observers used a pre-defined list that contained the main criteria as well as free space for further comments. The list was designed to help the participant observers to concentrate on specific behaviours of the participants, to save time and not to be distracted from the role of participant observer through note taking. The list also made it easier to compare collected data from two observers.

Participant observation, lasting 90 minutes, looked at the following aspects divided into four categories: difficulties, progress, interaction and experimentation.

1) Difficulties:

- a) Asks for help.
- b) Has a problem with a specific step of the tutorial.
- c) Has difficulties with the interface.
- d) Has difficulties with mouse positioning.
- e) Has other difficulties.

2) Progress

- a) Moves-on quickly.
- b) Moves-on slowly.
- c) Is often distracted.
- d) Is very concentrated.

3) Interaction

- a) Interacts with other participant(s).
- b) Helps other participant(s).

4) Experimentation, creative approach

- a) Experiments with the options of the tool.
- b) Tries out new operations and effects that are not included in the tutorial.
- c) Asks for assistance on how to perform an operation not included in the tutorial.

The first part is concerned with the difficulties participants have with the tutorial, the interface of the program, with using the mouse and other difficulties. It should also be noticed how often every participant asks for assistance.

The second part looks at participants' progress in relation to the rest of the group. The speed of the progress had to be noted in case of significant differences (e.g. very quickly or slowly). It also notes the degree of concentration on the task.

The interaction part relates to interaction with other participants during the hands-on session as well as helping others with their task.

The fourth section concerned the extent of experimentation with the tools, trying other tools and options and going beyond the functions explained in the tutorial through trial and error or asking for help.

Special attention was paid to participants' interaction with the user interface of the program, the progress and speed in relation to the rest of the group, motivation to experiment and try out things that were not included in the tutorial, how much help individual participants required, what sort of questions or problems arose, interaction with each other and facilitators, participants' mood and concentration and the creative input in the end product – the e-card.

The pre-defined list with categories was designed to ensure quick data collection through coding and concentration on behaviour of interest to the research. For example, if a participant asked for help and had difficulties finding the layers window, an observer noted: P 14: 1a; 1c (layers). According to the pre-defined list, that means that participant 14 asked for help and had problems with the interface of the program, in this case – the layers window. This method of data coding allowed the researcher and one assistant to concentrate on the session and observation and not to be distracted through note taking. Free-form notes were also allowed to capture behaviour that is of interest but not included within the pre-defined list.

The data collected through observation by two observers was compared, each unit has been analysed and disagreements resolved through discussion. Thereafter, the observational notes were amalgamated into one document.

Phase 3 – Post-session questionnaire

At the end of the session, participants were asked to fill in a questionnaire with seven open-ended questions and two scales (Appendix 2). The aim of the questionnaire was to capture participants' experiences with the GIMP and the task during the session. Participants were asked to write down words that mirror how they experienced the free image-editing program. There were also questions aimed to find out what was particularly easy and what was difficult during the hands-on session. One question required to the difficulty of the graphical user interface of the program according to personal experience with it. Participants were also asked if they discovered new

possibilities in image-manipulation that they had not previously known and how the session affected their concept of digital image-manipulation. Some questions were also aimed to discover participants' intentions to use the GIMP and other free and open source creativity support tools further. Participants had to state if they believe to be able to acquire new skills through the help of online tutorials and manuals and if they wished to extend their knowledge about image-processing with GIMP.

Participants were also asked for permission to phone them one month after the session to interview them about their progress with the GIMP.

Phase 4 – Telephone interviews

One month after the workshop, each participant who gave permission for a telephone interview was phoned for a short, semi-structured interview. The aim was to find out if study participants were using the GIMP further, whether the session had an impact on users' attitude to their personal creativity and creative activities using a computer, possible new discoveries and habits in digital content production and the intentions for future use of open source creativity support tools and the GIMP in particular.

Materials: The GIMP

GIMP is an acronym for 'GNU30 Image Manipulation Program'. It was started in 1995 and grew over the years into a powerful creativity support tool. It is a freely-distributed, raster graphics editor primarily employed for such tasks as photo retouching, image composition and image authoring. Due to the GIMP's numerous capabilities, it can be used as a simple paint program, an expert-quality photo-retouching program, an online batch processing system, a mass production image renderer, an image format converter, etc. (GIMP.org)

GIMP is expandable and extensible with its source code freely downloadable from the Web. It is designed to be augmented with plug-ins, extensions and other changes that often result in derivative products. A popular example is GIMPshop, a derivative of GIMP that re-arranges the user interface to resemble that of Adobe Photoshop. It provides a quick start with GIMP for users with previous Photoshop experience without requiring

³⁰ "GNU General Public License". Free Software Foundation. June 1991. <http://www.GIMP.org/about/COPYING>.

them to learn a new interface. The GIMP is widely considered to be the main free/open source alternative to Adobe Photoshop; it embodies to a similar degree both universality and user interface complexity (osalt.com). It offers file format compatibility with Adobe Photoshop which enables opening and editing PSD (native Adobe Photoshop format) files in the GIMP.

The GIMP also exists as an online version working in a cloud environment that can be accessed through a browser or as a portable executable version that requires no installation on the hard drive. The GIMP is released as source code under the GNU General Public License as free software. The current version of the GIMP works with numerous operating systems, including Linux, Mac OS X and Microsoft Windows. GIMP is one of the most popular free/open source graphic programs. Since the release - Windows version 2.6 - in February 2012, it has been downloaded from 'download.cnet.com' over 2.9 million times which makes approximately 10,000 downloads a week. Linux and Mac OS versions as well as GIMP derivatives are also downloaded daily by many users from all over the world. Since GIMP contributors joined the Open Usability project³¹, it has become possible for users to send their suggestions and wishes for the future development of the GIMP interface.

A comprehensive user manual for GIMP 2.6 (the current version) is currently available in ten languages. Apart from that, there are numerous online tutorials, forums and websites dedicated to the GIMP. In addition, there are currently fifteen printed books about using the GIMP for different domains listed on the official website of the program.

Due to its popularity, availability as free software and resemblance to and compatibility with Adobe Photoshop, a wide range of functions, well-written manuals, numerous resources for self-learning and the existence of many communities dedicated to the GIMP lead to its being selected as the tool for this study.

The decision to use an image-manipulation tool was based on survey results described in the previous chapter, where the majority of respondents stated their wish to expand their skills in digital image manipulation.

³¹ OpenUsability is an initiative that promotes usability in Free/Libre/Open-Source Software (openusability.org)

Comparing the GIMP with Photoshop

The GIMP is a cross-platform GNU image manipulation that works in many languages and is freely distributed. Often GIMP is mentioned as a free alternative to Adobe Photoshop. Besides the fact that GIMP is probably the most powerful image processing software that is distributed for free, there are significant differences to Photoshop. Photoshop is industry standard in image authoring and editing. It has a development history of about two decades and professionals who use the software developed their skills over a long period of time. Photoshop's interface is very complex and far from being user-friendly. It is aimed mainly a professional photographers and graphic designers or companies with a proud price of 600 £ or 18£ a month over a cloud subscription.

First, the GIMP has different aims and target population than Photoshop. GIMP is cross-platform and can be used on a Mac, Windows and Linux. It is the default image editor for many popular Linux distributions, and Photoshop is not yet available for Linux users. GIMP needs less hardware resources than Photoshop and can be run on older or less powerful machines. Photoshop has more features and functionality as it is designed to support different areas (graphic design, web development, photography). It is also designed to work with other applications of Adobe creative suite. In contrast, GIMP is distributed for free. Its primary aim is to support digital image processing for photography and web. This explains the often-criticised lack of support for CMYK and 16-bit colour depth. However, these functions are not used by a majority of users. As GIMP development takes place in collaboration with the user community and developers are users themselves, the missing functionality will be added in the future. GIMP also continues to catch up Photoshop in many features.

The GIMP is a powerful image processing program with many functions that require some training to get started with. In many forums users complain about the GIMP's Interface not being intuitive. The argument that GIMP has a difficult to master user interface probably comes from users who are already familiar with Photoshop. Being an advanced Photoshop user myself, I can confirm that switching from one program to another is not easy. Leaving behind previous experiences with other software products, GIMP's interface seems very logical and well structured. For those who switch from Photoshop, there is a GIMP distribution (GIMPShop) with interface that

resembles that of Photoshop. GIMP's open source development model is very strong that accounts for rapid improvement of the software. Every version offers more functionality and optimisation of usability and workflow as a response to the needs of the growing community of users.

GIMP's Graphical User Interface

The GIMP uses a Single Document Interface (SDI), which means that each of the windows within the program, such as floating dialog boxes or palettes, has its own entry on your panel (or taskbar, or Dock), just as though it were a separate program. As many users found it confusing to have several floating windows, latest version of GIMP (2.8) allows toggling between a single-window and multi-window mode.

In the default configuration, the GIMP groups its basic tools in the main toolbar window on the left. This is the core part of the program, and the only GIMP window that cannot be closed without quitting the program. The toolbox has several icons; each icon represents a different tool that can be activated by left clicking on the tool's icon in the toolbox, or by using a keyboard shortcut. Most of the tools have several options that allow setting up the tool to perform a specific way. Beneath the tools is a tool options tab; the options change context depending on which tool is selected. The window on the right, above, has tabs for layers, channels, paths and the undo history. Docked below this window are tabs for GIMP brushes, patterns and gradients. These windows and tabs can be changed or reordered according to user's needs.

The image window's menus, when combined with the tools in the Toolbox provide all necessary functionality for image modification. It contains eleven drop-down menus: File, Edit, Select, View, Image, Layer, Color, Tools, Filters, Windows and Help. The image menu window also contains scroll bars, rulers, zoom and measurements boxes and a notification area.

After one becomes familiar with the GIMP interface, it appears very logical and user-friendly. Menus, functions and tabs are structured to support an uninterrupted workflow. Some operations require more steps than in Photoshop. Nevertheless, GIMP offers an extended set of tools that should satisfy most needs of the majority of users. Some operations require creative approach in finding a way around to perform a specific task. However, the power GIMP is in the power of the community that sets on help and

peer-support. There are numerous tutorials in many languages made by users for users that help to learn how to use the software for digital image processing.

Pilot study

The New Dictionary of Social Work (1995:45) defines the pilot study as the: 'process whereby the research design for a prospective survey is tested'. Huysamen (1994) sees the purpose of a pilot study as an investigation of the feasibility of the planned project and for bringing possible deficiencies in the measurement procedure to the fore. Pilot studies are used in both quantitative and qualitative research to test the procedures and the instruments of a study.

A pilot study was conducted with four volunteers with the aim of optimising the workflow, evaluating the best possible timing for each session, finding out if the activities were at an appropriate level for the participants and refining the questions used in the questionnaire and the interviews.

The group consisted of four people, three women and one man aged between 35 and 55. Three of them had university degrees and one woman a vocational qualification. All the participants had a basic computer skill level and very little to no experience with computer-based creativity support tools.

The pilot study was conducted two weeks before the main study in the same settings. The participants filled in the pre-test questionnaire, ran through the whole process of the workshop and filled in the post-test questionnaire. Thereafter, each participant was interviewed in order to provide feedback and suggestions for the main session.

The pilot study showed that several questions of the pre-test questionnaire required some improvements in clarity and definitions. Also, it was recognised that the open-ended questions had to be replaced by a five-level gradation scale already used in some other questions on the form. This type of question is easier to answer and it provides information that is more detailed than the 'yes' or 'no' type. The questionnaire and the workflow were improved and optimised according to the findings of the pilot study.

Through observation of how participants cope with the task, the approximate timing for each step of the tutorial could be determined. However, in a session with a larger group, due to the individual differences of participants, the timing would probably vary. Through

observation, individual support and the post-test interviews it was possible to recognise if the tutorial was at an appropriate level of difficulty for the group.

Participants' time for completing the tasks slightly varied whereby some were faster than the others. For this reason, it was decided to include some 'optional extras' in each tutorial step for those who completed the step rapidly. This would help more advanced users to stay interested and to learn some additional functions of the program. The underlying idea of such a gradation was to include different levels of difficulty in a single session.

The data was collected through the pre-session questionnaire, observation, direct interaction with participants, the post-session questionnaire and the telephone interviews.

Main study data presentation and analysis

Data collected from the Pre-session questionnaire

The qualitative data obtained using different methods were analysed for possible interventions and connections of different factors. As the study is of an exploratory nature, it was not looking for specific outcomes but conducting an in-depth investigation of phenomenology of non-professional users' engagement with the GIMP.

Participants' characteristics:

Relevant information required for the analysis and evaluation of trends and conformities is listed in the table below (Table 6.1). All the data derived from the questionnaires can be found in a data sheet in the Appendix 2.

Age and gender

Thirty-three adult participants of different ages, genders and backgrounds took part in the study. There is a good distribution of age with slightly more participants aged 31-37, 45-51, and 52-58 compared to the other age groups, which had two participants in each.

Table 6.1. **Study participants' age and gender**

Age group	Women	Men	Overall
18-23	1	1	2
24-30	2	0	2
31-37	3	4	7
38-44	2	1	3
45-51	2	4	6
52-58	7	2	9
59-65	1	1	2
Over 65	0	2	2

Educational level:

Among the participants, there was one person in undergraduate education, eight people who had completed vocational education, five with a Bachelors degree, eighteen with a Masters degree and one person with a PhD. A total of 24 out of 33 participants held higher educational degrees. It has to be admitted, that the average educational level of participants is higher compared with the whole population. This can be explained, that people with a higher education are more likely to visit the community college (a place where the workshop was advertised) and be interested to learn to use the GIMP for image processing.

Occupation/Profession

There is a wide range of professions among the group of participants with people with different positions working in various areas. There are teachers, merchandisers, engineers, carpenters and self-employed people among them. The detailed information of each participant can be derived from the data sheet in the Appendix 2. The occupational range of participants can also be possibly explained through their interest in image processing that can be useful for their work or leisure.

Self-evaluation of Personal Creativity, Computer skills and Willingness to learn using creativity support tools

In the questionnaire, participants were asked to rate according to a five-point scale (1-5, whereby 1 stands for 'not creative at all' and 5 stands for 'highly creative') their personal creativity, computer skills and willingness to learn using creativity support tools.

The results are presented in the table below.

Table 6.2. Self–evaluation of Creativity, Computer Skills and Willingness to learn creativity support tools

Self-evaluation	1 no	2 lower medium	3 medium	4 upper medium	5 high
Creativity level	0	3	14	4	6
Computer skills	0	8	10	9	5
Willingness to learn using creativity support tools	0	1	3	8	21

Creativity level:

According to the responses, six people out of 33 have chosen the highest creativity level, four decided for upper medium creativity level, the most popular was the medium creativity level with 14 participants, and finally, three people have chosen the lower medium level. There were no 'not creative' people in the group, according to the results of the self-evaluation. The creativity level obtained through self-evaluation is not objective. However, it points to the role of creativity in individual's life and can be linked with motivation to learn using computer-based creativity support tools.

Computer skills:

Due to the workshop requirements, all participants had at least basic computer and Internet skills. Out of 33 participants, there were five with very good computer skills, nine people with good, ten people with intermediate and eight participants with lower intermediate computer skills. According to their self-evaluation, almost a half of the

group (14 people) had upper intermediate to advanced computer knowledge, which was very beneficial for the study.

Previous experience with creativity support tools:

More than a half of the participants had no previous experience of using creativity support tools. Fifteen participants stated that they already used such graphical applications as Adobe Photoshop, Microsoft Publisher, Corel Draw, and Google Picasa for some simple operations such as image cropping, re-sizing and lightness/contrast adjustments. None of the participants had any experience of using the GIMP.

Willingness to learn using creativity support tools:

Participants were asked if they wish to expand their existing knowledge and acquire new skills in using software creativity support tools. The willingness was indicated on a five-point scale. As a result, about two-thirds (22) of the participants chose the highest level for their intention to learn. Eight people chose the upper-medium level, three decided for the medium and only one person for the lower-medium level. Participants with higher level of creativity established through self-evaluation in Question five, were more interested in learning to use computer-based creativity support tools than those with lower levels of creativity. Thus, it can be seen that the majority of the group had a strong desire to learn more about digital opportunities for creativity. Such a high percentage is also explained through the sampling method, as people signed up for the workshop on a voluntary basis. This means that most of them were interested in learning some image manipulation techniques using a computer.

Everyday creative activities:

According to the pre-session questionnaire, all of the participants are involved in some kind of creative activities in their everyday lives. Some examples are: photography, writing, drawing, painting, baking, cooking, inventing new games for children, creating presentations, new concepts, dancing, music-making, decorating, gardening, discovering something new, flower breeding and learning.

The role of creativity in each participant's life:

According to the self-evaluation data collected through the pre-questionnaire, creativity plays a rather important role in participants' lives. In some of the answers to the open-ended question concerned with the personal attitude to creativity, people wrote that creativity makes life interesting, colourful, full of sense; that every action needs a creative approach; creativity is self-expression, development and fulfilment, an opposite to routine, a pleasant hobby, an exchange of ideas and experiences. Although every individual has a different conception of creativity, the majority of respondents saw creativity in the context of everyday life and not as an exceptional quality of a genius.

Creative activities using computers:

Among the various creative activities that were usually performed with the help of computers, some of the most popular listed by participants were: searching for information, inspiration and ideas; photo-editing and sharing, creating PowerPoint™ presentations, music-mixing, communication, commenting on other's creative work, working on a personal website and creating promotional material. These activities were also listed by many respondents to the survey part of the research.

Similar to the survey answers, participants of this study listed the following digital creativity skills that they would like to master: advanced photo-editing, manipulation, blogging, digital art, desktop publishing, music-composition and creating a personal website, among others.

Creativity support tools, FLOSS³²

The last part of the pre-session questionnaire was aimed to reveal participants' awareness of existing creativity support tools as well as of free and open source software.

Participants were required to list image-editing software they knew or had heard of. Photoshop, MS Office tools, Picasa, Irfan View and the GIMP were named in decreasing order of popularity. Some of participants could not name any image-editing computer programs.

³² FLOSS stands for Free/Libre/Open Source Software

Participants were also required to state if they knew anything about free and open source software (FLOSS) and if they used it. Similar to the survey results in this study, some participants stated that they were not familiar with FLOSS and therefore were not using it or did not know whether they were using. Only a small number of respondents stated that they knew about FLOSS and were using it on their home computers.

Data collected through observation linking it with the pre-session questionnaire data

The two groups that took part in the study in two different sessions both had a good distribution of age, gender and other demographic characteristics, e.g. occupation. Both groups showed behavioural similarities and parallels during the study. They were also experiencing the same procedure and workflow during the sessions. For this reason, the observational data of the two sessions have been combined into one narrative and the participants regarded as one group. The group behaviour, as well as that of some individuals, will be discussed.

Each full session lasted 120 minutes. A 30-minute theoretical introduction was performed with the help of a projector connected to the main computer. That was followed by a 90-minute hands-on session where participants were performing the task by themselves on individual computers. The tutorial was also provided as a step-by-step guide in the form of paper handouts. The theoretical part was presented by a teacher-researcher and observed by a trained assistant. During the tutorial sessions, participants were listening with attention and concentration. Almost no conversations were taking place in the room. Some participants made notes during the tutorial. After the tutorial, in the practical part of the session, all participants seemed to try out eagerly the new techniques they had just learnt.

Evaluation of observation according to categories of the pre-defined list.

All participants, apart from three, asked at least once for help. The majority of participants from the younger three age groups (18-23, 24-30, 31-37) rarely required external help. Older participants and those with lower levels of computer skills (reference the data from the pre-session questionnaire) required more frequent assistance.

Problems with a specific step of the tutorial

Retouching was revealed to be the most demanding step of the tutorial. The task was to over-paint the disturbing objects in the picture with the clone tool. This step required an understanding of the clone tool's functionality and the use of a mouse and a keyboard simultaneously. All participants required some time to become accustomed to the tool and to the art of mouse handling for this operation. Younger participants understood it quicker and performed the operation faster and more precisely than the others. This step was a challenge for all participants and some of them required more help than others. The clone tool and retouching require precise positioning of the mouse cursor. Six participants, with lower computer skills, had difficulties with mouse handling. They required some time to get accustomed to the tool and its functionality. Four of them were able to use the tool after approximately 10-15 minutes. Two of the group had significant problems in using the clone tool precisely. However, the whole group managed to complete the task. Some of the faster participants tried out the clone tool for decorating and painting purposes, which had interesting and creative results.

Working with layers was another essential functionality of the GIMP that is rather unusual for someone without experience of graphical programs. The fact that the image is not flat, but a pile of layers, requires different visual thinking that can be difficult for beginners. Nevertheless, it is an important aspect required for image-editing, retouching, colouring and working with text; therefore it was included in the tutorial. Almost half of the participants (14 persons) had problems remembering to switch to another layer when they wanted, for example, to edit text or to darken the background. Other participants, especially those with experience with Photoshop, which also has layers, followed the tutorial sheet and experienced no problems with it. However, it should be admitted that working with layers is an advanced skill that requires experience and training. Nevertheless, more than a half of participants managed this without any external help.

Difficulties with the interface

Seven participants aged over 38 were slightly irritated by the window-based interface of the GIMP. They had difficulties switching their focus from one window to another

although the main menu, the toolbox and the layer windows were clearly indicated on the handouts. Despite the fact that the tool icons were included in the tutorial and printed on the handouts, four users aged over 52 had occasionally problems finding the required tool on the tool palette. These participants required more time to perform the main task and often needed assistance. All of the participants who experienced difficulties with the interface had computer skills lower than 3 (on the scale 1-5).

Difficulties with mouse positioning

As already mentioned above, six participants aged over 45 had difficulties with precise positioning of the mouse cursor. This was an obstacle in such operations as selection, red-eye removing and retouching. Four of the group slightly improved their mouse handling after 10-15 minutes of training whereas for two participants it remained a significant obstacle. Zooming the picture proved helpful in ensuring a better positioning of the mouse cursor.

Other difficulties

About one-third of participants of different ages required some time to understand the logic of the clone tool although it was explained in the tutorial. With the tool, one area of an image is copied and used to retouch other sections of the image, whereby the tool is not static and follows the position of the mouse cursor, copying corresponding sections of the image. As stated above, retouching is an essential, but advanced procedure that requires training and experience. Therefore, for novices, understanding and learning it requires some time and training.

Progress / Distraction

The majority of the group managed to complete the main tutorial within approximately 60 minutes. Participants aged 18-23, 24-30 and 31-37 seemed to cope with the task rather quickly and without significant difficulties. However, some of them were often distracted through interaction with other participants. Participants from the other age groups, over 38, varied in their performance.

Through linking the data table of the pre-session questionnaire and data from observation revealed that the factors that have an impact on the participants'

performance are their age and levels of computer skills. Younger participants and those with self-evaluated computer skills higher than 3 (on the scale 1-5) managed to complete the task within an average time of 60 minutes. Five participants finished the main task within 40 minutes and used the remaining time for exploration of other functions of the GIMP and experimentation. Four participants aged over 52 with low levels of computer skills progressed very slowly and required significantly more time for some operations like red-eye removing and retouching than other participants. However, they managed to complete the task within 90 minutes.

Interaction/collaboration/help

People who came alone and probably knew nobody from the group were working individually. Many of the other participants who came with a partner or a friend were collaborating, helping each other in case of difficulties. People who knew each other also occasionally compared their results, looking at each other's monitors and exchanging experiences. Some of younger participants who did not come alone were occasionally observed helping their older relatives.

Experimentation

The majority of the group was successful in completing the main task following the step-by-step tutorial without much deviation. Some steps of the tutorial like selection, red-eye removing and cropping were rather technical and did not leave space for experimentation. Other steps like colour adjustment, retouching and adding text offered a field for experimentation. Thus, all participants were observed trying different options before they decided on one particular setting or effect. For instance, they could decide which areas to use for retouching, decide on the size of the clone tool and the movement of the mouse. Using the text tool, participants had to choose a font, its size, colour, position and effect.

Some participants showed a creative approach to most of the individual tasks in the tutorial. First, they followed the step-by-step tutorial and learned how a specific tool or technique worked. Then, many of the participants started to experiment with the tool, achieving interesting and creative results. Those participants who managed to complete the task within 40-60 minutes had time to engage with the optional extra tasks included

in the tutorial. Most of them also experimented with other tools of the GIMP. Some of them asked for help while trying out things that were not included in the tutorial.

Summary

All participants managed the whole task successfully within 90 minutes or less, although some advanced elements were included in the tutorial. Some of them required more time and help than the others, especially the older people. Younger participants showed a better understanding of the interface and the workflow and required less time and help than the others. The whole group appeared interested and motivated. Some of the participants used the newly-acquired skills to experiment with the tools and produced creative results.

The combination of the observational data with the data of the pre-session questionnaire revealed some dependencies and regularities. Some participants showed a better performance: they had no difficulties with the software interface and mouse positioning. They understood the tasks rapidly and performed them in practice fluently without recourse to the assistants. To the group that showed fluency in completing the task, belonged the majority of participants aged between 18 and 37. Those participants from the older groups aged over 37 whose computer skills were at the upper-intermediate and advanced levels (4 and 5) also mastered the task and the individual steps without great difficulty.

Among participants aged over 37, computer skills had more impact on the performance than the age. Thus, older people described on the questionnaire as having a higher level of computer literacy appeared to cope better with the graphical interface of the program, the mouse and the tasks. In contrast, participants aged over 38 with a computer skill level of 2 (lower intermediate) experienced certain difficulties with handling the mouse cursor and working in the window-based interface of the program. Interestingly, younger participants aged between 18 and 37 with computer skill levels two and three (lower intermediate – intermediate) appeared not to have such problems. Users with more computer experience showed a better understanding of the graphical user interface of the tool. They also had few difficulties with the precise mouse-handling required for specific operations.

Comparing the observational data with the pre-session questionnaire, it is recognised that the majority of participants who were motivated to experiment with the tools had upper-medium or high creativity levels (according to their self-evaluation). There were also some younger people aged between 18 and 30 in the group. The younger participants were faster at completing the task and therefore had more time left for trying out new things.

The willingness to learn using software-based creativity support tools was also an important parameter for motivation and involvement in the session. People with a higher rating in their questionnaires showed more ambition and interest in acquiring new skills than those with a lower rating of their willingness to learn using software for creativity.

People who were interested in digital photography showed an exceptional interest in such useful techniques as red-eye removal and background retouching.

The majority of participants appeared to be very excited and proud of themselves after completing the task. After the session, the participants were moving around, looking at each other's work, commenting and discussing. Many people e-mailed the e-card they made to themselves to keep it for later. The overall atmosphere was very positive and delighted. Many participants expressed their gratitude and said that the session was very interesting and helpful.

Date from the Post-session questionnaire

After the session, all participants received a questionnaire that had the objective of learning about their experience with the GIMP and the task. The purpose of the questionnaire was also to reveal if the session had influenced a participant's concept of digital image-manipulation and if they planned to use the GIMP in the future. The last question inquired about people's willingness to learn other free and open source creativity support tools.

In the first question of the post-session questionnaire, respondents were required to write down a few terms that expressed their impression of the GIMP. The answers of thirty-three participants are combined in the cloud diagram below, whereby the bigger the size of the term, the more frequently it has been named.

Cloud Diagram 6.1. **Participants' impressions of working with the GIMP**



As can be derived from the answers, the majority of participants were impressed by the wide range of functionalities and possibilities of the tool and the program's clarity and accessibility.

The next question targeted the difficulties the participants experienced during the workshop. According to the answers, about a half of the participants had no particular difficulties during the session. Another half of the group listed the following functions and operations they found rather difficult: exact selection and cursor positioning, cloning, red-eye removal, working with layers and the variety of buttons on the interface. These actions are of an intermediate level. Therefore, these functions were likely to be challenging for people with little or no experience of working with graphical computer programs.

In the following question, the respondents were asked to list the tools and individual steps they found especially easy during the workshop. Many wrote that nothing was difficult to perform. Some people gave more detailed answers and listed the following tools and actions they found easy: the toolbox was easy and intuitive, retouching, colour adjustment, working with text, red-eye removal and cloning.

Comparing the difficult and the easy functions listed by participants, it can be seen that some of them overlap, for example cloning and red-eye removal. These rather sophisticated tasks may have appeared difficult for beginners and easy for participants with more computer and image-editing experience.

The next question was concerned with participants' opinion of the graphical user interface of the GIMP. In general, the group responded positively to the interface, listing such terms as: clear, structured, intuitive, well-organised, easy, understandable and with a very useful rollover help. Some participants, however, noted that the variety of windows and buttons on the interface needs getting used to, some experience and training.

Among the new possibilities that the study participants discovered during the session, the most popular were retouching, different cloning options, adding text to an image, red-eye removal and working with layers. About a half of the group stated that everything they learnt during the workshop was new to them.

In the next question, the participants were required to evaluate the extent to which the workshop affected their concept of image-manipulation. They were asked to rate the intensity according to a five-point scale and, optionally, could write an open-ended description. The majority of participants selected the points four and five on the scale, which stand for 'rather affected' and 'very affected', respectively. Only a few people selected the intermediate point (3) on the scale. Most of them had already some experience with image-editing programs and therefore they were familiar with some of the functions.

The most popular concept among the comments in this section was that image-editing is much easier than the participants believed and that it is learnable and manageable for an ordinary user. Some people wrote that they discovered many new opportunities for creativity through the GIMP. A few were astonished by the wide range of functionality of this non-commercial, free tool.

All the participants stated that they would use the GIMP in the future. The majority of respondents believed themselves capable of expanding their GIMP skills with the help of the online manual, tutorials and examples. According to the five-point scale, all the answers were placed between points three and five, which indicates 'rather positive' expectations of participant's abilities for self-learning with the online resources.

Almost all of the study participants wished to learn about other existing FLOSS creativity support tools for different purposes such as video-editing, music-composition and other, unspecified, creative uses.

To sum up, all participants successfully completed the task. Some participants required more time and help than others due to the lower levels of computer knowledge and experience which involves such essential skills as mouse-handling and orientation within a graphical user interface that often consists of several menus and windows. Nevertheless, the majority of the study participants found the GIMP interesting, learnable and with a clear and well-structured interface. Some people stated that the tool needs getting used to. This would be relevant for any new program with an unfamiliar user interface. The positive feedback was that people discovered new opportunities for creative activities. Most of the participants radically changed their concept of image-manipulation from one restricted to the professional and sophisticated user to that of an everyday activity suitable for an ordinary user and for themselves. In this regard, the workshop had a positive effect on building the participants' self-confidence and motivation to learn to use this tool in particular and to try out new free and open source creativity support tools. All participants appeared highly motivated to use the GIMP in the future.

Telephone Interviews

The participants in the study were asked if they could be contacted for a short telephone interview one month after the workshop in order to learn about their progress with the GIMP. Twenty-six participants gave their written permission for such a contact. The remaining seven people gave the following reasons for not being willing to be interviewed: some of them would not be available at the time; others said they would have no opportunity to install and use the GIMP during the month following the practical session.

Twenty-four of the participants were interviewed (the remaining two participants could not be contacted over the phone).

The following questions were used in the interviews:

- Have you been using GIMP after the workshop?
- If no, what are the reasons for not using the GIMP?
- If yes, what are you using it for?
- Have you learned any new functions through the online or other GIMP learning resources?
- How would you describe your progress with the GIMP after the workshop?

Out of twenty-four participants, thirteen stated that they installed the GIMP on their home computers. The remaining eleven people said that they had no time and no necessity to install and use the tool, but most of them said that they plan to use the program in the future, for example to edit holiday photographs. The thirteen participants who downloaded and installed the program reported having used the GIMP at least once for basic operations like re-sizing, cropping, colour adjustment and retouching. Eight people of the group have been using the GIMP occasionally. Most of them used the skills they acquired through the workshop and the user manual available at the GIMP website. However, three women reported having learned new techniques through online resources like the GIMP manual, user forums, Google and YouTube learning videos.

People who have been using the GIMP occasionally edited digital images for sharing on the Internet and for printing.

One woman, aged 42, became an addicted user of the GIMP. Digital photography is her hobby. She discovered tremendous opportunity for creativity with the programme. She is constantly learning new techniques and applying them to her photographs. She posts her work online on diverse photo-sharing websites. She also reported having created a calendar with her photographic works that she edited with the GIMP.

The GIMP opened up a world of new opportunities for creativity and self-expression for me. I never considered myself as a creative person, but I recently discovered for myself digital photography. It is exciting how one can capture a moment of reality which can be transformed then into an artwork existing all by itself. The image-manipulating possibilities of GIMP change the way I take my photos. I can remove disturbing objects, adjust colours and enhance the quality of my snapshots. I would like to learn more functions that GIMP is capable of, but there is not always time to do that. Now I believe that equipped with the right tools as my new digital camera and the GIMP I am throughout capable of creativity and moreover, I believe that my creativity is enhancing [sic] (Female Participant, 42 years old).

As could be revealed from the data from telephone interviews, a large number of the participants was inspired by the workshop to use the GIMP for image processing. Many of them downloaded and installed the tool shortly after the session. However, the lack of time was given by many as the main barrier to using the tool at home. Some participants said that they currently had no pictures to edit and that they were planning to edit the next holiday pictures with the GIMP. Nevertheless, one-third of the group who had given permission for telephone interviews was occasionally using the tool. Some of these people even acquired new skills through the online resources. One woman discovered a new way of creative expression and enhancement of personal creativity through digital photography and image-editing with the GIMP. Another female participant stated to be using the GIMP for editing her self-made photographs in order to use them as illustrations for her book.

All participants who have been interviewed reported that the workshop session had been very helpful and they knew that they were capable of basic image-editing and manipulation. Many said that that is a very important skill and they would definitely make use of it in the future. It is important that they know which tool to use and where to find it along with tutorials and help.

Limitations of the study

The main aim of this study was to explore how non-professionals experience using the GIMP for simple to intermediate level image processing during a single-day introductory workshop and whether the workshop can facilitate further use and acquisition of new skills through self-learning. There was no intention to test the usability of the GIMP formally. Rather, the study explored how users experienced engagement with the tool through observation and their self-reporting. All users received the same materials and were asked to perform the same task to facilitate observation and comparison. The actual focus of the study was on the process and not the outcome. Therefore, the outcomes are discussed briefly and not in detail.

A convenience rather than a representative sample has been used in this study. Although the results can provide some exploratory insights in the area of using the GIMP by non-professionals for image processing, the results are not generalizable to the

whole population. Due to the technical restrictions, the group was divided into two sub-groups that took part in the workshop on two consecutive Saturdays. Although everything has been done to ensure the same workflow for each session, slight variations in tutorial and presentation could be possible, especially caused by the questions from the participants that needed to be answered. The different composition of the two groups also had an impact on the process of the workshop, the interaction between participants and factors of distraction.

The pre-session and the post-session questionnaires involve several questions that require self-reporting and self-evaluation from participants. In the pre-session questionnaire these questions concern participants' creativity and creative activities, computer skills, experiences with image editors, awareness of FLOSS and motivation to acquire new skills for computer-supported creativity. In the post-session questionnaire, the questions were aimed at self-reflection and evaluation of personal experiences with the GIMP during the session and intentions for its future use.

Self-reporting was chosen as a method that communicates the personal conceptions and experiences of participants from their subjective perspectives in the best way. However, this method is often criticised for its limitations and bias. Social desirability, or "the conscious tendency to see oneself in a favourable light" that leads to "the conscious presentation of a false front, such as deliberately falsifying test responses to create a false front" (Raphael, 1987) is one of the most significant biases in self-reporting. In case of questions concerned with creativity, participants might have different concepts of it, this is also confirmed by different answers to question seven (the role of creativity in a participant's life). Thus, people who think of creativity as an exceptional gift are less likely to see themselves as highly creative individuals. In contrast, people who understand under creativity the everyday or the little 'c' creativity are more likely to report being creative and engaged in creative activities. Honesty, accuracy in responding - issues of understanding or a tendency to respond in a certain way – are other possible limitations of self-reporting. Despite these limitations, self-reporting is a necessary tool in behavioural research as it enables the exploration of issues that cannot be researched through other techniques. It is especially relevant for this study that is concerned with personal creativity and motivation for participation and learning from the subjective perspective of participants.

During the workshop, the researcher was also a teacher who presented new material to the group and, together with another person, facilitated the hands-on session through providing help and assistance. The dual role of teacher-researcher has potential limitations in the form of a bias that concerns data collection and analysis. To assure a role separation and reduce distraction, the session consisted of a theoretical part that had a form of presentation that the teacher-researcher conducted in front of the class and a hands-on part, when the teacher-researcher and her assistant could move around the room, provide assistance and collect data through observation.

To reduce the bias and subconscious falsification, the data collected through observation was compared with that of the trained assistant.

Telephone interviews were chosen as the most convenient method to learn about participants' further experiences with the GIMP and other open source software. Only those participants who provided their agreement during the workshop session were interviewed. Despite the limitations of telephone interviews such as short duration, no face-to-face contact and social desirability bias, this was the best and the only possible method (due to budget and technical restrictions) to receive the desired information from participants. To conduct the interviews one month after the workshop proved to be too short a time as many participants replied that they intend to try working with the GIMP at home, but had not found time to do so yet. Some of those participants had already installed the software, but did not go further. Some people said that they plan to engage with the tool in their vacations. A longer period of time, for instance, 6 months, would be more advantageous to provide more realistic results about which of the participants is using the GIMP.

Discussion and Conclusion

The study showed positive results retrieved from a workshop where a free software image-manipulation tool - the GIMP - was introduced to computer users with no professional expertise in image processing. The results show that this free and powerful image editor is thoroughly suitable for non-professionals after they have been familiarised with its basic functionality and the graphical user interface.

The sample group consisted of people of different genders, ages and backgrounds. Among these demographic factors, in the majority of cases, a participant's age was the determining factor that affected their performance during the workshop. Participants from the three younger age groups: 18-23, 24-30 and 31-37 comprehended the tutorial more quickly and were faster in the practice phase. Apart from the demographic characteristics, participants' self-evaluated levels of personal creativity, computer skills and willingness to learn about creativity support tools were essential variables that had an impact on participants' performance and creative engagement. Thus, people with higher levels of computer skills were more confident and faster with individual tasks than people with less computer literacy. They also had less problems with the finding the tools and exact positioning of the mouse cursor. Participants with higher creativity levels and willingness to learn creativity support tools showed more motivation to experiment with the tools and try out new things. Many of them achieved interesting creative results.

Data analysis of the post-session questionnaire revealed that Most of the study participants found the graphical user interface clear, well-structured and learnable. Some participants, however, noted that the variety of windows and buttons on the interface needs getting used to, some experience and training. The majority of participants were impressed by the wide range of functionalities and possibilities of the tool and the program's clarity and accessibility. Participants with lower levels of computer skills (self-reported) had some difficulties with intermediate to advanced tools and operations like: exact selection and cursor positioning, cloning, red-eye removal or working with layers and the variety of buttons on the interface. Among the new possibilities that the study participants discovered during the session, the most popular were retouching, different cloning options, adding text to an image, red-eye removal and working with layers. About a half of the group stated that everything they learnt during the workshop was new to them.

The data from the question where participants were required to rate in how far the workshop affected their concept of image-manipulation. The majority of the group revealed to be 'rather affected' and 'very affected'. The freeform part of the question provided responses that describe that image-editing is much easier than the participants believed and that it is learnable and manageable for a non-professional user. Some

people wrote that they discovered many new opportunities for creativity through the GIMP. A few were astonished by the wide range of functionality of this non-commercial, free tool. All the participants stated that they would use the GIMP in the future. The majority of respondents believed themselves capable of expanding their GIMP skills with the help of the online manual, tutorials and examples.

Data from the telephone interviews revealed that a large number of the participants felt confident after the workshop to use the GIMP for image processing. Slightly less than a half of the group had downloaded and installed the tool shortly after the session. Many participants stated that because of the lack of time they had not engaged with the tool yet but intended to do so in the future. Eight people of the group have been using the GIMP occasionally since the workshop. Most of them used the skills they acquired through the workshop and the user manual available at the GIMP website. However, three women reported having learned new techniques through online resources like the GIMP manual, user forums, Google and YouTube learning videos.

As can be derived from the experiment, one workshop can achieve a lot in building people's confidence in the use of a digital software tool. In a guided tutorial session with hands-on training an application and corresponding online resources for self-learning and participation are introduced to people so that they can use them further on their own. It is a time-saving learning opportunity compared to courses offered by community colleges. It has several advantages:

- A single-day or a half-day workshop does not require much time from participants and, therefore, is more likely to attract all those interested.
- Such a workshop is cheaper in organisational costs and can be offered by local governmental and educational institutions at a very low price or free of cost. This could provide learning opportunities especially for people with low income.
- In an introductory session with hands-on training, participants not only learn the basic functions of a specific program, but, more importantly, the opportunities for self-learning through online resources and communities of practice.
- Introductory workshops for a range of software tools could be organised that help to build digital competencies and diminish the participation gap.

Although a single-day introductory workshop cannot provide advanced knowledge on a specific subject, it can serve as a starting point for the independent use and acquisition of new skills through learning-by-doing and online resources and communities. As a

time-saving, low-cost solution, such workshops can be organised by adult education centres or government institutions and included into the curriculum of formal education as well as forming part of workplace learning.

The telephone interviews conducted one month after the workshop revealed that one-third of the interviewees were already using the GIMP for some image-manipulation tasks. There were also two cases of a big success with two female participants who have subsequently been using the tool for creativity on a regular basis, constantly acquiring and utilising new skills through self-learning. One of them reported that the tool helped her to find her way into creative self-expression and enhancement of her creativity.

The GIMP tutorial and practice session proved to be successful in engaging non-professionals in image manipulation with the GIMP and facilitating further use and learning through individual effort.

The main benefits from the workshop are:

Acquisition of new skills and successful completion of the task made the majority of the group believe that image-editing is not very difficult and they are capable of learning how to do that. The tool had been perceived as understandable and suitable for self-learning after a guided introductory session with hands-on training. The session increased the participants' confidence in their abilities and it motivated many to continue using the GIMP and to explore other free and open source applications. Indeed, the majority of participants stated that they found the workshop extremely helpful and motivating. The guided, hands-on session introduced 'the basics' of digital image manipulation, creating the foundation knowledge for further self-learning. It was also important that the participants had the opportunity to ask questions and resolve the problems and difficulties they experienced with the help of a trained assistant. Without such a session, it would be quite unlikely that the majority of participants would have started using the GIMP or any other similar tool on their own. The workshop that lasted 120 minutes provided the participants with essential information about the Free and Open Source Movement and its difference from the proprietary software. Participants learned about the basic functionality of the GIMP and where to find and how to use corresponding resources for communication and learning. It served as an initial impetus

for the further engagement with the tool and the acquisition of new skills through participation in online communities and self-learning.

Considering that a single workshop had such a positive effect on people's confidence and skills concerning the use of digital technologies for creative tasks, it would be very beneficial if people had such opportunities for learning digital content creation and manipulation. Single introductory sessions offered for free or at affordable prices can help many into digital inclusion and participation in digital culture.

Acquaintance with new tools for creative production can help people to discover their personal creativity and, more importantly, reduce the fear of unknown technologies.

The pre-session questionnaire of this qualitative study revealed that the majority of people are involved in everyday creative activities. Many of them are already using computers for some creative tasks. Most participants are eager to learn new tools and techniques that can help them to be more creative with the help of computers. However, the lack of information about available software resources prevents many from exploring the field of digital content manipulation. Many people are unaware of the wide range of free and open source creativity support tools that can be downloaded at no cost. The tools can cover almost all creative needs. However, for want of promotion, they remain undiscovered by many of the users who need them most.

The Open Source and Free Software domains are functioning on a voluntary basis without much funding involved. However, the current trends in information technology promise a great future for the domain of user-centred applications. With this research, the hope is to support the development of this future-orientated culture of peer-to-peer creativity, draw the attention of the academic world to this alternative movement of social production based on freedom and cooperation and increase its popularity among the general public.

The hope is also to draw the attention of the governmental and educational structures to the need for adults to have affordable opportunities to acquire digital competencies in organised sessions. An open-learning initiative might have positive results, however, it needs to be advertised and introduced to the wider public.

Some people manage to adopt the new technology on their own, acquiring new skills through learning-by-doing, formal or informal learning. However, a large proportion of society needs external help in order to 'get started'. Younger people and advanced

computer users are living in a different communication landscape to the rest of the world. Many of them fully-utilise the possibilities of new-media technology driving the innovation forward. On the other hand, many parts of society are already excluded from those aspects of modern life that take place only on the digital level. The gap caused by technology is increasing due to the rapid technological progress. The new technology and its capabilities need to be introduced and explained to the potential users. This is the only way to foster technological progress, since it is boosted by the needs of the users. If the technological adoption process is allowed to develop naturally as it occurs within a society, it will cause a growing gap of digital inequality between different parts of society. 'The process of information technology adoption and use is critical to deriving the benefits of information technology' (Karahanna, Straub and Chervany, 1999:183). Not everyone is capable of learning how to use the new technology independently. Providing opportunities for learning can increase the chances of more people leading a fulfilled life in the digital age.

Conclusion

In this research, the wide-ranging social and cultural implications of digital technologies have been explored focusing on the extensive possibilities for everyday creativity, participation and informal learning in the online social spaces enabled through the user-centred architecture of the new generation of the Web – Web 2.0.

In this thesis, creativity is seen as an inherently social and communicative process that relies on a wide range of factors through which the creative process becomes possible. The terms ‘everyday’ or ‘little c’ creativity are used in this thesis to refer to the natural human ability that is employed within the contexts of everyday life. This type of creativity relies on personal characteristics as well as creativity-relevant and domain-relevant skills. The domain-relevant skills include technical knowledge, creativity techniques and knowledge of the domain. This knowledge can be acquired through formal and informal learning, through practice and observation and participation in communities of practice. In line with Pickering and Negus (2004), skill development through practice and communication of experience is considered in this thesis as a necessary component of creative practices that lead to a greater mastery and quality of outcome as well as to personal rewards.

Within the empirical stage of this research, the implicit theories of the general public concerning their personal everyday creativity and the use of digital technologies for creative practices have been explored. Through the combination of ‘top-down’ theoretical and ‘bottom-up’ empirical approaches, it has been possible to distinguish ‘everyday’ creativity as a separate domain from the socially significant ‘higher’ or exceptional creativity. Although personal conceptions of creativity can differ significantly from one individual to another, most of the participants recognise the value of everyday creativity in the pleasure of the creative process, the novelty of the creative product for the individual and the satisfaction and recognition gained from sharing it with the circle of friends and relatives. Grounded in cultural studies, Pickering and Negus (2004) approach creativity primarily as social communication, the communication of experience, as a process that brings that creative experience into meaning and significance in a way that can be shared between people. With the increasing expansion of digital technology,

creation, communication and sharing have become easier through the use of digital creativity support tools as well as online communication and content-sharing platforms.

The participatory turn in the consumption of culture and the growing ubiquity of communication and information technologies gave birth to the rise of amateurism and the emergence of the novel types of amateur production (e.g. 'crowdsourcing', 'produsage'). A new type of serious amateurs or Pro-Ams emerged who, individually or through collaborative effort, work to professional levels and in this way create economic value and contribute to the common culture. Open Source software projects, Wikipedia, Citizen Journalism and amateur scientific communities are among areas that rely on the voluntarism of contributors. Such collaborative efforts result in a vast development of innovative products and knowledge databases that serve the needs of a growing digital community, often overtaking commercial products in popularity. Amateurism is a complex concept that involves different levels of commitment and qualities. Digital networked technology provides a wide range of tools that enable amateurs to connect to other amateurs and professionals through social networks and communities of practice, to reach the wider audience through blogs, personal websites and virtual showrooms and to acquire new knowledge through online learning resources.

The growing expansion of digital technology with its means for communication, instant messaging, content production, manipulation and publishing also initiated a rise in grassroots creative practices. The growing availability of smartphones, portable computers and other electronic devices equipped with video and photo cameras, text editors and sound recorders has contributed to the emergence of new, digitally-based, communication models. This communication takes place in the online-networked social space that is being accessed through a range of Internet-capable devices owned by large numbers of people. For instance, if a majority of people have hitherto been using text and voice to communicate in daily life, today, digital images and video footage are used along with more conventional forms of media in day-to-day social communication. These visually-weighted forms of information exchange are responsible for the increasing interest in digital imaging and video recording among the general public. As derived from the survey on everyday creativity and the use of digital technology for creative activities (Chapter 5), the majority of participants claimed to be interested in

digital photography and image manipulation. Photo- and video-editing has also been proved to be one of the skills in most demand for digital content production.

The numerical nature of digital data in connection with the global network allows immediate access, production, manipulation, remixing and distribution of digital content. Through the decentralised and participatory architecture of the online environment, a non-linear and non-hierarchical 'many-to-many' model of communication between users becomes possible. These key characteristics have enabled a participatory shift in the use of digital technology. With the participatory architecture of Web 2.0 and the increased availability of the Internet-capable devices, the one-to-one model of communication is being gradually substituted by the many-to-many model within the global network. The vast expansion of online media that combine previously dispersed tools for user interaction like instant messaging, forums, mailing lists, showcases, blogs and groups with shared interests is evidence of the current and growing popularity of such communication among the general public. The digital tools are increasingly used for information distribution and exchange, collaboration, knowledge dissemination, informal learning, the display of creative work and many other social activities on the web.

With respect to the everyday creative activities, the digital technology can be supportive in the following ways:

- Learning and inspiration: searching for information, tutorials, existing work.
- Connection: communicating with the similar-minded, asking for and providing help, information exchange, and experience-sharing.
- Participation in virtual communities of practice: informal learning through participation.
- Collaboration.
- Audience and Showrooms: finding audience and setting up virtual showrooms.
- Feedback: receiving feedback, judgment and corrections from other users of a community or a social network.

The Internet contains a tremendous database of searchable resources. A significant part of this information can be freely accessed from any computer connected to the global network. In this sense, searching for information, tutorials and experiences of other people (in the form of blogs, forums, personal websites and user comments) has become a part of almost any activity that steps into a previously unknown terrain or aims

for improvement and progress. Creative activity of any form can benefit from a purposive use of digital technology. Pickering and Negus (2004) define creativity as communication of experience that is an inherently social and collaborative process. For them, a creative process is never complete without communication. Drawing upon communication as an integral part of a creative process, the digital technology, due to its global connectivity, provides a convenient way to connect to other people around the world and make use of the informational resources available online.

The participatory networked infrastructure of the Internet contributed to the shift from the one-to-one communication model to a community-based model. Thus, a big part of online interaction with other users takes place within communities and social networks. These communities have different purposes and numbers of members. There are commercial communities whose service providers gain profit from user membership and participation or there are open user-led communities that mainly focus on knowledge generation and experience exchange. The community-based structure of Web 2.0 enriched the concept of communities of practice developed in the early '90ies with a new community type – the virtual community. Etienne Wenger, one of the founders of the situated learning theory that is based on informal learning through participation in communities of practice, points out later, that 'one critical role of technology ... is to provide new resources for making togetherness more continuous in spite of separation in time and space' through the 'breeds of interfaces and devices that bring the experience of community to the individual' (Wenger *et al.*, 2005:2). Wenger sees technology as complementary to the community. In regard to virtual communities of practice, this view is too limited as they are enabled through digital technology, they use the technical possibilities of this technology and have certain limitations due to the technical restrictions. Thus, virtual communities of practice are fully dependent on digital technology. The methods of communication and data flow between the users of a virtual community also rely on the rules of Internet communication and data exchange. Blogs, forums, mailing lists, chat rooms and audio and video conferences are among other possible communication channels provided by digital technology that can be used by a community.

As in conventional communities, in virtual online communities learning can take place through direct mentorship and through participation. Among important advantages

of digital technology are the searchable databases, where knowledge and existing discussions can be stored and accessed any time. Although virtual communities of practice do not meet face-to-face and therefore lack rapport, they often connect a large number of amateurs, professionals and hobbyists and have other advantages such as no dependency on the time of the day and geographical location. Most communities also provide access to searchable databases of tutorials and existing work. This enables self-directed non-linear learning from a community's available resources. However, technology can also become a hindrance to participation. Limited access to digital technology and the Internet, lack of the skills to use the technology as well as physical disabilities often stand in the way of successful participation in online communities. For Barton (2013), learning is embedded in the process of using the Internet. Therefore, he sees the boundaries between use and learning blurring. Using virtual environments requires skills that need to be learned. This encompasses not only the technical skills necessary for using the tools, but also the abilities to participate in non-linear discussions and forums, skills for collaboration, information management and search and interaction with other users that we do not meet physically. Informal learning through participation in online communities of practice encompass acquisition of domain-relevant skills through observation, mentorship, peer-support and feedback as well as acquisition of technical skills that include technical knowledge and the abilities to use the means of online communication and publishing. Especially for those with restricted access to conventional communities (due to their geographical location, the domain or other reasons), online communities of practice offer valuable resources for learning, communication, collaboration and gaining mastery in the domain and presenting their own work to others.

Digital technology enabled new types of open, self-regulated, peer-to-peer communities that rely on the model of collective intelligence and collaboration. Wikipedia is a popular example of such communities. The online encyclopaedia, based on the idea of Web 2.0, illustrates a model of a collaborative knowledge base with more than 76,000 active contributors working on more than 34,000,000 articles in more than 285 languages as of 2012. The free software and open source community is probably the concept most associated with collaborative work as it would be impossible without contributions from a large number of volunteers. Citizen journalism, scientific projects

that make use of the engagement of amateurs, domain-relevant communities dedicated e.g. to photography, crafting, modelling or other areas – all these are examples of online communities of practice. Some of them are purely virtual and their members never meet. There are also ones that meet face-to-face and have an active online interaction. According to Lave and Wenger (1991), initially, people join a community and ‘learn at the periphery’. With their growing competence they become more involved in core processes within a community, moving from peripheral participation into ‘full participation’ (1991:37). Thus, they see learning merely as a process of social participation of which acquisition of knowledge is an integral part.

A significant part of modern communication takes place within the commercial online social media networks like Facebook and Twitter where users permanently update their status, share their thoughts and current activities and respond to other users’ posts. The easy-to use tools for digital-content production and publishing enable modern ways of digital storytelling: sharing personal experiences, posting photos about important events in people’s lives and expressing their identities through various new-media creative practices. This type of communication utilises various media forms like text, video- and photo-messages and sound or music recordings. The exponential growth of social media networks and community portals illustrates the public’s striving after communication based on everyday creativity and self-expression, as well as community involvement and the pleasure of sharing. This results in huge amounts of user-generated content uploaded daily to those services.

While proponents of UGC see democratisation of media production as empowerment that gives liberating power to the people, its opponents criticise the on-going amateurisation of many areas and the exploitation of user agency. The democratising opportunities enabled by Web 2.0 technology can, on the one hand, bring empowerment and freedom to produce, remix and distribute user-generated-content on the Web. On the other hand, the users of web services supply personal information to service providers that is used to create economic value. Thus, as Proulx *et al.* (2011:22) argue, the actual use of the Internet ‘helps reinforce a production system that we have termed informational capitalism’.

Communities and collective action is not a radical innovation brought about by Web 2.0. However, the new type of collaboration and community-building is not limited

to the local availability of subjects wanting to participate. Instead, the global network enables transboundary connections between people according to their interests and aims, not bound to their physical location. This opens up new opportunities for experience exchange, learning and collaboration that can involve people of different levels of expertise. According to Proulx *et al.* (2011), two conditions are required for empowerment through the use of digital technologies: the consciousness of community and the ability to act collectively. Specific services like Facebook are merely technical tools that support 'existing practices of resistance or creative hijacking to the extent that it is anchored in processes of social and political awareness already at work in the collectivities concerned' (Proulx *et al.*, 2011:19). Raising awareness about the ownership of user data and the differences between the commercial and user-led communities among Internet users can facilitate a more conscious approach to participation in social networks and virtual communities as well as to the uploading of personal data.

Empirical findings

The exploratory survey described in Chapter 5 provided primary data on the personal concepts of everyday creativity, the extent to which computer technology is used for creative activities and for which tasks, participants' motivation to acquire ICT skills to support creative activities and which areas are the most interesting to learn. According to the survey data, 76% of participants are involved in some kind of creative activities supported by digital technology. While some creative tasks are performed directly using computers, for others, computers serve as tools for research, communication and storage. Image-manipulation, online research and publishing are the most popular everyday creative activities of the sample of 502 participants. Among the creative tasks participants are eager to be able to perform with the help of computers, the most popular are digital content production methods such as image-, video- and music-editing, designing, 3D modelling and other creative activities that require advanced content production skills and appropriate software tools. Digital photography and the processing and retouching of digital images are the most popular and demanded creative activities among the survey participants. The majority of them (87%) wish to acquire skills in

image editing and manipulation in order to make their photographs that they print or publish online more visually appealing. The results of this study reveal that participants strive to use digital technology for creative activities and produce and share content but there are several barriers that prevent many from doing so: a lack of computer skills, software knowledge and software tools. Lack of time for creative practices with or without computers is another obstacle identified by many participants. The data showed that there is little awareness about the Free and Open Source software tools for creativity as well as corresponding communities of practice and learning resources.

A major part of digital competency is an awareness of the tools enabling modern communication through the searching, production, manipulation and sharing of digital content. Moreover, the accessibility of tools is crucial if they are for mass consumption and use. Accessibility means that the tool is available for free or at a very low cost. According to the survey data, 60% of participants would not pay more than £50 for creativity support tools with half of them unwilling to pay at all. Only every fifth participant is ready to pay over £150 for computer software for creativity. Commercial programs for creativity support are often not affordable for an ordinary user. As a result, people have no choice but to use pirate products or not to use the tools at all. Due to the dominance of the widely advertised commercial software products, free and open source alternatives are usually less known among the general public. It is not in commercial software manufacturers' interest to allow the wide promotion of the non-profit, user-centred, free and open source community. Nevertheless, its rapid growth and increasing popularity speak for themselves.

Another important aspect of accessibility is the documentation and usability of the tool adjusted to the digital competency level of its consumers. Thus, the graphical user interface should be simple enough to be used intuitively, without formal training or special skills. For instance, the intuitive and self-explanatory interface of Facebook is one of the main reasons for its extreme popularity. This ease of use motivates people to try out new features and to develop new-media skills. The pleasure of success is another motivational factor to engage with the new-media opportunities. Clay Shirky points out the importance of digital content creation and sharing tools for users' intrinsic motivations:

If intrinsic motivations are fundamental to human nature, and if satisfying them satisfies us, then the use of tools that satisfy those motivations should spread. In particular, if the social media provides a platform for creating and sharing at a low enough cost, then participation in activities that reward an intrinsic motivation should rise, even if the satisfaction lasts only a brief moment (Shirky, 2010:86).

Fun and the feeling of success are important factors that nurture intrinsic motivation. Taking this into account, digital and mobile communication technology manufacturers seem aware of the needs of everyday creativity and entertainment. The new culture of 'Apps' is conquering the mobile electronic devices bringing creativity, usefulness and fun together. The mini-applications, many of which are aimed at digital content production and manipulation, are designed as an entertaining method for multimedia communication between technology users.

Although there is a great variety of creativity support tools available on mobile devices and on the Internet, their capability is usually limited to basic operations with digital content. Advanced editing requires more powerful hardware and software. The development of online and mobile technology will need some time to overtake, at least partly, the capability of the stand-alone software programs. The difference between the flexibility and power of online graphic editors like 'Photoshop.com' or 'Google Picasa' and stand-alone applications illustrates this point. Despite the convenience of accessing online tools through the browser interface, they offer a very limited range of options and functionality that is often hindered by the restricted data transfer speed of the user's broadband connection. For this reason, the growing demand for the creation and manipulation of digital content requires more capable and functional tools than those currently available online. Moreover, the tools for public creativity have to be freely available and readily accessible.

For non-professional everyday use, digital content and software tools published under open licences are especially beneficial, not only because most of them are available at no cost, but also due to the power of the community, which ensures that they are well supported. Dedicated users and developers build a strong and vivid online network that offers learning resources, tutorials, help and peer-support, which are valuable for the development and mastery of skills. The survey described in Chapter 5

revealed that there is a lack of awareness among participants about those free and open opportunities for creative practices and informal learning available online. Therefore, promotion of open educational resources and software tools in the form of free or low-cost seminars and workshops for the general public can help to increase digital competency whilst motivating people to engage with digital technology for communication and everyday creativity.

As could be derived from the survey described in Chapter 5, although specific open source applications, such as Mozilla Firefox, Thunderbird or Open Office, are widely used, the underlying concept of freedom to use, to modify and to share that distinguishes these tools remains hidden from the majority of users. The awareness of existing licences for digital content is an important part of digital competency. This knowledge allows the user to modify and distribute content legally if it is published under an appropriate licence such as the 'Creative Commons' or 'GNU General Public License'. Numerous software applications are available as free or open source software (FLOSS)³³ ranging from the simple and easy-to-use to the powerful that are suitable for professionals. The majority of these tools can be downloaded from the web at no cost. However, many of the tools have advanced functionality and unintuitive user interfaces. The majority of people who never used a software tool or a similar one before would have certain difficulties applying the program for the purposes it was designed for. The software needs to be learned and it is difficult without an external support in the form of a face-to-face or video tutorial and a tutor who can provide help and answer questions at least in the initial stage of learning the tool's functionality. After a user is familiarised with the basic tools and functions of a program, he or she can acquire further skills through the learning-by-doing method and the use of corresponding learning resources available online or in printed versions.

To illustrate the importance of an initial introductory session for the successful use of a software tool and further learning, a group of people with no professional knowledge of using image editing programs participated in a single-day workshop where they learned how to do basic image processing with a free software editor, the GIMP

³³ The FLOSS - Free/Libre/Open Source movement and the alternatives to commercial types of licences are described in Chapter 4.

(Chapter 6). The main goal of this practical training was to make participants familiar with the GIMP and its functionality, to let them try it out in a hands-on experience as well as to provide information about corresponding communities of practice and learning resources so that participants can use the tool independently and apply it to their own creative practices. One of the central goals was to lead participants into the discovery of free and open resources for creativity that offer, along with various tools, the know-how and community support which is the most valuable asset of digital networks.

The session that lasted 120 minutes provided the participants with essential information about the Free and Open Source Movement and its products' differences from proprietary software. Participants learned about the basic functionality of the GIMP and where to find and how to use corresponding resources for communication and learning. The GIMP tutorial and practice session proved to be successful in engaging non-professionals in image manipulation with the GIMP and facilitating further use and learning through individual effort. Acquisition of new skills and successful completion of the task made the majority of the group believe that image-editing is not very difficult and well within their capabilities. The tool had been perceived as understandable and suitable for self-learning after a guided introductory session with hands-on training. Indeed, the majority of participants stated that they found the workshop extremely helpful and motivating. The guided, hands-on session introduced 'the basics' of digital image manipulation, creating the foundation knowledge for further self-learning. It was also important that the participants had the opportunity to ask questions and resolve the problems and difficulties they experienced with the help of a trained assistant. Without such a session, it would be quite unlikely that the majority of participants would have started using the GIMP or any other similar tool on their own. The workshop helped to build participants' confidence in their abilities to engage creatively with digital images and motivated the acquisition of new knowledge and skills through the online resources associated with the GIMP. Some members of the group continued using the tool for editing their self-taken digital images seeking help from GIMP-relevant online communities. Participants also expressed an interest in using free software and open source tools for various other tasks such as mind-mapping, music- and video-editing and others.

As can be derived from the experiment, one workshop can achieve a lot in building people's confidence in the use of a digital software tool. In a guided tutorial session with hands-on training, an application and corresponding online resources for self-learning and participation are introduced to people so that they can use them further on their own. It is a time- and cost-saving learning opportunity compared to courses offered by community colleges. An introductory session can be highly effective in 'breaking the ice' and reducing the fear of approaching unknown tools. 'Learning by doing' is known to be a successful model in adult education for acquiring new knowledge and skills. It would be helpful in gaining participants' confidence in using computer technology to support creativity and engagement with the participatory opportunities of the digital technology. Moreover, such training can provide people with the necessary information and knowledge for using online resources for self-learning, help and community support.

The domain of open and free knowledge that comprises creative works published under alternatives to copyright licences, such as the GNU General Public License, Creative Commons and other licences that promote open access to knowledge, tools, learning and scientific resources, is proposed in this thesis as being especially beneficial for general computer users – those who have at least the basic computer and Internet skills. Nevertheless, free access, openness, the strength of a community and collaboration build a supportive environment for both beginners and professionals. Driven not by profit but by an intrinsic motivation, the connected power of the commons offers efficient alternatives to proprietary products, which has proved to be a successful model of user-driven innovation. This model of decentralised production based on openness, collaboration and creativity is a facilitator of growth and progress. Open licences offer freedom of use, distribution and sharing that enable 'building on the work of others' (Lessig, 2000) grounded in the 'wisdom of the crowds' or 'crowdsourcing'³⁴ as a new type of creativity-based economy. Based on openness and free access to knowledge, online communities of practice facilitate creativity, learning, ideas exchange,

³⁴ 'The term "crowdsourcing" is a concatenation of "crowd" and "outsourcing," first introduced by Jeff Howe in a June 2006 article in Wired magazine "The Rise of Crowdsourcing" where he defines it as "the act of outsourcing tasks, traditionally performed by an employee or contractor, to an undefined, large group of people or community (a crowd), through an open call". Howe's alternative version of the term is the application of Open Source principles to fields outside of software.

collaboration and communal-value creation. As with experienced users, novices can benefit from the 'wisdom of the crowds'³⁵ enabled through the participatory architecture of the web.

Therefore, it is particularly important to make the free and open-source tools and resources accessible to the broader population of computer users as an essential part of digital literacy education.

Implications for Further Research

This thesis explored the role of digital technology in the everyday creative practices of the general public. The participatory structure of Web 2.0 has been investigated for its potential to support creative activities, the production and publishing of audio-visual content and informal learning through participation in virtual communities and connection to other users.

The growing ubiquity and expansion of digital technologies in modern society has set new communication standards that utilise the World Wide Web as a platform for information exchange, everyday creativity and community involvement. Modern digital communication comprises different media forms such as texts, images, audio and video. A significant part of communication takes place within online communities and social media networks such as Facebook, MySpace and other commercial platforms that build economic value through meeting users' needs for creativity, self-representation, self-expression and a sense of community. The exponential growth of social media portals over recent years is a response to participatory developments in web applications that enable users to become new-media participants and creators. User-agency and creativity is enabled by, and is the very product of, the participatory opportunities built into the architecture of the World Wide Web.

³⁵ In his book "The Wisdom of Crowds: Why the Many Are Smarter than the Few and How Collective Wisdom Shapes Business, Economies, Societies and Nations" published in 2004, Surowiecki argues that "under the right circumstances, groups are remarkably intelligent, and are often smarter than the smartest people in them" even if members of the crowd don't know all the facts or choose, individually, to act irrationally. "Wise crowds" need (1) diversity of opinion; (2) independence of members from one another; (3) decentralization and (4) a good method for aggregating opinions.

Parallel to commercial services, user-led communities that function through the active contribution of volunteers have risen in popularity, e.g. Wikis, Free and Open Source Software, Access to Knowledge and Open Knowledge initiatives. Also, the majority of Internet users are probably familiar with some of these projects like Wikipedia, the user-led online encyclopaedia, or the popular Internet browser Mozilla Firefox. However, many of them are unaware of the underlying concept of openness and freedom and, more importantly, how the user data is handled by the service provider. In the researcher's view, the awareness about data ownership, copyright and alternative licenses for digital content and software that grant certain freedoms for use, modification and distribution is part of the digital competency necessary for the conscious use of digital technology. How to increase this awareness among the general public is a suggestion for further research.

Another important point revealed from this research is the barriers that prevent many from participating in online environments and using digital technology for creative practice. Among the major barriers is the lack of technical skills for the use of software tools for content production and editing and for the use of web-based tools for publishing and participation in online communities. This knowledge is essential for a fulfilled life in contemporary society as many communication channels are only available through digital technology. Further research can investigate the ways in which this learning can be facilitated and improved. This learning may have positive implications for the quality of user-generated-content which is often a point of criticism (e.g. Keen, 2007).

In the area of creative practice and amateur photography, an in-depth investigation of participation in virtual communities of practice in regard to informal learning and gaining domain-relevant mastery is of particular interest for further inquiry undertaken by a researcher building on this thesis.

New-media communication has become an important aspect of social life. The increasing role of digital technologies in contemporary communication processes is a relatively new phenomenon. Therefore, there are several problems arising from the vast digitisation of modern life. One of them is the digital inequality that is caused through the various levels of digital literacy in society.

Despite the wide opportunities for new-media participation and production, only some groups of people are using the technology efficiently. Modern communication

standards presuppose the advanced knowledge and skills required to produce, manipulate and share digital content. This set of knowledge can be combined under a unitary term – *digital literacy*, the lack of which is one of the main barriers that prevent some people from engaging with digital technology for communication, creativity and self-expression.

The vast expansion of computer use and the Internet as well as the lack of formal training opportunities for different age groups of people result in an unequal access to digital technology and new media. Some users acquire new-media skills by trial and error that often leads to frustration or low-quality, amateurish content being published online. Some other groups of people are not confident in using the digital technologies at all or only use them to a limited extent.

It is highly important to develop strategies for increasing the level of digital competency in society and especially to provide accessible opportunities for formal or informal training in using the digital tools for efficient communication and creativity. Without such a unitary programme, the inequality gap will increase leaving disadvantaged groups outside the modern digital society.

Creativity and sharing bring joy and happiness to individuals; shared knowledge builds the 'wisdom of the crowds' (Surowiecki, 2004) – a pool of collective creativity and intelligence where many through their diversity are smarter than the elite few. Creativity and connection to other people can make life more interesting and fulfilled; free and open knowledge, as well as tools for creativity, can lead to a more creative and innovative society.

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Appendix 1

Additional Data for Chapter 5:

Survey on Everyday Creativity and the role of a computer in creative activities.

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Screenshot of the Online Survey Administrative Interface

The screenshot displays the LimeSurvey administrative interface. At the top, the title "LimeSurvey" is centered. Below it, the "Administration" section shows the user is logged in as "admin" and an update is available (1.90+ (9642)). A navigation bar contains icons for home, user management, survey management, and other functions. The "Surveys" section shows a dropdown menu with the selected survey: "Творчество в повседневной жизни" (ID: 89357). Below this, the "Survey" details are displayed for the selected survey. The details include the title, URL, description, administrator information, start and expiry dates, template, base and additional languages, exit link, number of questions/groups, and survey status. A "Hints" section provides information about anonymization, date stamping, IP logging, and other survey settings.

LimeSurvey
Administration -- Logged in as: admin Update available: 1.90+ (9642)

Surveys: Творчество в повседневной жизни

Survey Творчество в повседневной жизни и роль компьютера в творческой деятельности человека. (ID:89357)

Question groups: Please choose...

Title: Творчество в повседневной жизни и роль компьютера в творческой деятельности человека. (ID 89357)

Survey URL (Russian): <http://localhost/limesurvey/index.php?sid=89357&lang=ru>

Description:

Welcome:

Administrator: Violetta Dajanev (violetta.dajanev@googlemail.com)

Fax to:

Start date/time: -

Expiry date/time: -

Template: copy_of_default

Base language: Russian - Русский

Additional languages: English - English
German - Deutsch (Sie)
Turkish - Türkçe

Exit link:

Number of questions/groups: 20/1

Survey currently active: Yes

Survey table name: lime_survey_89357

Hints: Answers to this survey are anonymized.
It is presented group by group.
Responses will be date stamped
IP addresses will be logged
Participants can save partially finished surveys
Detailed email notification with result codes
Regenerate question codes: [\[Straight\]](#) [\[By group\]](#)

LimeSurvey Version 1.87+ (8374)

Survey on Everyday Creativity and the role of a computer in creative activities.

English
Version

1. Your age

Choose one of the following answers

- under 18 24-30 38-44 52-58 over 65
 18-23 31-37 45-51 59-65
-

2. Your Gender

- Female Male
-

3. What is the highest level of education you have achieved?

Please choose *only one* of the following

- A-level education (A, AS, S-levels, High school)
 Undergraduate education (not completed degree, some college)
 Vocational education (eg NVQ, HNC, HND, Trade, Technical school)
 Bachelors Degree (BA, BSc)
 Masters Degree (MA, MSc, MBA)
 Doctoral Degree
 Other.....
-

4. What is your current job?

Please write here

5. Country of current residence.

Please write here

6. Do you see yourself as a:

Please choose *only one* of the following

- very creative person a bit creative
 creative person not creative at all
-

7. Are you involved in creative activities?

-these are any kind of activities where you use your imagination and create something new or new

combinations of existing things, for example: crafting, decorating, photography, dancing, creative cooking (inventing new dishes), music-making, writing a Blog or any others).

If 'Yes' proceed to the next question; If 'No' go to question 9.

Yes

No

8. Please state your creative activities if you answered 'Yes' to the previous question. (please separate each by a comma).

Please write inside the box

9. Do you use a computer or the Internet for any of your creative activities?

(Even if it is an indirect use like e-mailing or searching the web).

If 'Yes' proceed to the next question; If 'No' go to question 11.

Yes

No

10. Please state your creative activities and what tasks you perform on a computer for each activity. (please separate each by a number)

Examples:

1. Knitting - Take photos of my knitted things and share them with my friends through a website or e-mail.

2. Cooking - exchange recipes and photos of my dishes.

3. Photography - edit my pictures and publish them online.

Please write inside the box

11. What is your computer operating system?

Please choose *all* that apply

- Windows Mac OS Linux Other.....
-

12 What kind of software do you use?

Please choose *all* that apply

- Commercial Free or Open Source I do not know
-

13. Do you use any of the following applications?

Please choose *all* that apply

- Mozilla Firefox / Opera
 Mozilla Thunderbird
 Open Office / Neo Office
 Irfan View / VLC Player / Other free Viewers or Players
 Free or Open Source Graphic / Music Software
 Other Free or Open Source Software
 I do not know
-

14. How much money per year would you spend on software to help you be creative?

Please choose *only one* of the following

- 0 £ 1-50 £ 50-150 £ over 150 £

15. If you do not use your computer for creative purposes - why?

Please choose *all* that apply

- I am not a "creative" person

- Computers don't help me to be creative
 - Lack of computer knowledge / software skills
 - I have no creative software
 - I would like to, but do not know where to start
 - I have no time for that
 - Other:.....
-

16. If you use a computer for creative activities, where?

Please choose *all* that apply

- At home
 - At my study place
 - Internet-café
 - At work
 - At friend's
 - Other.....
-

17. Would you like to learn how to be more creative with the help of a computer?

- Yes
 - No
-

18. If you had the software and the skills, would you use a computer for creative tasks?

- Yes
 - No
-

19. Please state for which creative tasks would you use a computer if you had the necessary skills? (please separate each by a comma)

Please write inside the box

20. What is 'creativity' for you? Please state your attitude towards creativity.

Please write inside the box

Umfrage über Kreativität im Alltag.

Das Ziel dieser Umfrage ist die Rolle der Kreativität in unserem Alltag zu erforschen, wobei die Verbindung zwischen Kreativität und Computer Technologie von besonderer Bedeutung ist.

Germa

n

Version

1. Ihr Alter

Bitte wählen Sie nur eine der folgenden Antworten aus

- unter 18 24-30 38-44 52-58 über 65
 18-23 31-37 45-51 59-65
-

2. Geschlecht

- Männlich Weiblich
-

3. Was ist der höchste Bildungsgrad den Sie erreicht haben?

Bitte wählen Sie nur eine der folgenden Antworten aus

- Realschule Ausbildung Master

Sonstiges _____

- Abitur Diplom Doktor
-

4. Was ist Ihr Beruf?

Bitte hier schreiben

5. Land des ständigen Wohnorts.

Bitte hier schreiben

6. Sehen Sie sich als:

Bitte wählen Sie nur eine der folgenden Antworten aus

- Sehr kreative Person Ein wenig kreativ
 Kreative Person Überhaupt nicht kreativ
-

7. Machen Sie etwas Kreatives? - gemeint sind Aktivitäten aller Art, wo Sie Ihre Phantasie ins Spiel bringen und etwas neues oder neue Kombinationen vom Bekannten kreieren.

Zum Beispiel: basteln, dekorieren, fotografieren, tanzen, kreatives kochen (wo Sie sich neue Gerichte ausdenken), Musik machen, Blog schreiben und ähnliches.

Falls JA - bitte beantworten Sie die nächste Frage.

Falls NEIN - bitte gehen Sie zur Frage 9.

Ja

Nein

8. Bitte listen Sie Ihre kreativen Aktivitäten auf,

falls Sie die vorangegangene Frage mit „Ja“ beantwortet haben. (bitte durch Komma trennen)

Bitte hier schreiben

9. *Verwenden Sie einen Computer für einige von Ihren kreativen

Aktivitäten?

(Auch wenn Ihr Computer nur indirekt für kreative Zwecke genutzt wird, wie zum Beispiel E-Mail schicken oder im Internet surfen).

Falls JA - bitte beantworten Sie die nächste Frage.

Falls NEIN - bitte gehen Sie zur Frage 11.

Ja

Nein

10. Bitte schreiben Sie für welche kreative Aktivitäten Sie einen Computer benutzen und welche Aufgaben dabei mit Hilfe eines Computers gemacht werden.

Beispiele:

1. Stricken – Fotografiere die von mir gestrickten Sachen und schicke die Fotos meinen Freunden.

2. Kochen – Entwickle neue Rezepte und tausche sie aus mit meinen Freunden.

3. Fotografie – mache Fotos, bearbeite sie und stelle sie online.

Bitte hier schreiben

11. Welches Betriebssystem ist auf Ihrem Computer installiert?

Bitte wählen Sie einen oder mehrere Punkte aus der Liste aus.

- Windows Mac OS Linux

Sonstiges.....

12. Welche Computerprogramme benutzen Sie?

Bitte wählen Sie einen oder mehrere Punkte aus der Liste aus.

- Kommerzielle / Kostenpflichtige Kostenlose, Free oder Open Source Ich weiss es

nicht

13. Benutzen Sie einige von den folgenden Anwendungen?

Bitte wählen Sie einen oder mehrere Punkte aus der Liste aus.

- Mozilla Firefox / Opera
 Mozilla Thunderbird
 Open Office / Neo Office
 Irfan View / VLC Player / Andere kostenlose Viewer und Player
 Kostenlose, Free oder Open Souce Grafik- / Musik programme
 Sonstige Kostenlose, Free oder Open Souce Programme
 Ich weiss es nicht
-

14. Wieviel Geld würden Sie pro Jahr für Computer-Programme ausgeben, die Ihnen helfen können kreativ zu sein?

Bitte wählen Sie nur eine der folgenden Antworten aus

- 0 € 1-50 € 50-150 € über 150 €

**15. Wenn Sie Ihren Computer für kreative Aufgaben nicht benutzen –
Aus welchem Grund?**

Bitte wählen Sie einen oder mehrere Punkte aus der Liste aus.

- Ich bin kein kreativer Mensch
- Computer kann mir nicht helfen kreativ zu sein
- Ich habe nicht genügend Computer- und Programmkenntnisse
- Ich habe keine kreative Programme
- Ich würde gern, aber ich weiß nicht, wo ich anfangen soll
- Ich habe keine Zeit dafür
-

Sonstiges:.....

**16. Wenn Sie einen Computer für kreative Aufgaben nutzen, an welchem
Ort?**

Bitte wählen Sie einen oder mehrere Punkte aus der Liste aus.

- Zu Hause
- In der Schule/Uni
- Internet-café
- Auf der Arbeit
- Bei Freunden
-

Sonstiges.....

**17. Wollen Sie lernen wie Sie mit Hilfe eines Computers kreativ sein
können?**

- Ja
 - Nein
-

**18. Wenn Sie die nötigen Programme und das Wissen hätten, würden Sie
Ihren Computer für kreative Aufgaben nutzen?**

- Ja
 - Nein
-

**19. Bitte schildern Sie, welche kreativen Aufgaben Sie mit Hilfe eines
Computers machen würden? (Bitte, durch Komma trennen).**

Bitte hier schreiben

20. Welche Bedeutung hat für Sie persönlich der Begriff «Kreativität»?

Bitte hier schreiben

Творчество в повседневной жизни и роль компьютера в творческой деятельности человека.

Russia

n

Version

1. Ваш возраст

Выберите один из ответов

- меньше 18 24-30 38-44 52-58 старше 65
 18-23 31-37 45-51 59-65

2. Пол

- Женский Мужской

3. Ваш уровень образования

Выберите один из следующих ответов

- Незаконченная средняя школа
 Средняя школа
 Техникум
 Институт/университет
 Мастер
 Ученая степень
 Другое.....

4. Ваша профессия и род деятельности

Пишите здесь

5. Страна проживания

Пишите здесь

6. Вы считаете себя человеком:

Выберите один из следующих ответов

- очень творческим немного творческим
 творческим совсем не творческим

7. Вы занимаетесь творческой деятельностью?

Сюда относится любой род деятельности с использованием творческого воображения для изобретения новых идей или новое использование уже существующих. Например: фотография, ручные поделки, вязание, декорирование помещений, изобретение собственных кулинарных блюд, танцы, сочинение музыкальных произведений или рассказов и многое другое.

Если ДА - переходите к следующему вопросу. Если НЕТ - перейдите к вопросу 9.

Да

Нет

8. Если вы ответили положительно на предыдущий вопрос, опишите, пожалуйста, род вашего творчества. В случае нескольких видов творческой деятельности, разделите их пожалуйста запятыми.

9. Используете ли вы компьютер и интернет в процессе творческой деятельности, включая написание e-мейлов или поиск информации?

Если ДА - переходите к следующему вопросу. Если НЕТ - перейдите к вопросу 11.

Да

Нет

10. Опишите, пожалуйста, вид творческих занятий и что конкретно вы делаете на компьютере для каждого занятия.

Например:

- 1. Вязание – делаю фотографии связанных вещей и посылаю знакомым.*
- 2. Придумываю новые рецепты салатов, печенья и др. и обмениваюсь ими.*
- 3. Фотографирую и презентую мои работы на сайте.*

11. Какой операционной системой Вы пользуетесь на вашем компьютере?

Выберите все что подходит.

- Windows Mac OS Linux

Другое.....

12. Какие компьютерные программы Вы используете?

Выберите все что подходит.

- Коммерческие Бесплатные, Free / Open Source Не знаю
-

13. Используете ли Вы какие-нибудь из следующих компьютерных программ:

Выберите все что подходит.

- Mozilla Firefox / Opera
 Mozilla Thunderbird
 Open Office / Neo Office
 Irfan View / VLC Player / Другие бесплатные вьюеры и плееры
 Бесплатные, Free или Open Souce графические / музыкальные программы
 Другие Бесплатные, Free или Open Souce программы
 Не знаю
-

14. Какую сумму в год Вы готовы потратить на приобретение компьютерных программ для реализации Ваших творческих способностей ?

Выберите один из следующих ответов

- 0 \$/€ 1-50 \$/€ 50-150 \$/€ более 150 \$/€

15. Если вы не используете компьютер для творческих целей, почему?

Выберите все что подходит.

- Я не творческий человек
- Компьютер не способствует моему творчеству
- Мне не хватает необходимых знаний и умений
- У меня нет нужных программ
- Я бы очень хотел/а, но не знаю, как к этому приступить
- У меня нет времени для этого
- Другое:.....

16. Если Вы используете компьютер в творческих целях, то где?

Выберите все что подходит.

- Дома
- По месту учебы
- В Интернет-кафе
- На работе
- У друзей
- Другое.....

17. Хотели бы Вы научиться пользоваться компьютером в творческих целях?

- Да
- Нет

18. Если бы у вас были необходимые программы и навыки, вы бы использовали компьютер для вашего творчества?

- Да
- Нет

19. В каких творческих целях Вы бы использовали компьютер, если бы обладали достаточными для этого знаниями и умениями? (Пожалуйста, перечислите через запятую).

20. Что означает для Вас творчество? Опишите Ваше отношение к творческому процессу.

Günlük hayattaki yaratıcılık üzerine

Turkish
Version

Bu anketin amacı günlük hayattaki yaratıcılığımızı araştırmak, yaratıcılık ve bilgisayar teknolojisi arasındaki ilişkinin anlamını incelemek.

1. Yaş Grubunuz?

- 18 yaş altı 24-30 38-44 52-58 65 yaş
üzeri
- 18-23 31-37 45-51 59-65
-

2. Cinsiyetiniz?

- Kadın? Erkek?
-

3. Eğitim seviyeniz?

- Temel Eğitim
 Lise
 Ön Lisans
 Lisan
 Yüksek Lisans
 Doktora
 Diğer
-

4. Mesleğiniz?

5. Yaşadığınız ülke?

6. Kendinizi nasıl tanımlıyorsunuz?

- Çok yaratıcı Biraz yaratıcı
 Yaratıcı Yaratıcı değil
-

7. Yaratıcı olarak birşeyler yapıyor musunuz? Bütün sanat aktiviteleri kastedilmektedir.

Örneğin: el işi, dekorasyon, fotoğraf çekmek, dans etmek, yaratıcı yemekler pişirmek, müzik yapmak, blog/internet sayfası hazırlamak yada benzeri...

Cevabınız "Evet" ise lütfen bir sonraki soruyu cevaplayınız, değilse 9. soru ile devam ediniz.

Evet

Hayır

8. Bir önceki sorudaki cevabınız "Evet" ise lütfen yaratıcı aktivitelerinizi listeleyiniz.

9. Bilgisayarınızı yaratıcı aktiviteleriniz için kullanıyor musunuz?

(Dolaylı olsa dahi, bilgisayarınızı E-Mail göndermek veya internette gezinmek için kullanıyor musunuz?)

Cevabınız "Evet" ise lütfen bir sonraki soruyu cevaplayınız, değilse 11. soru ile devam ediniz.

Evet

Evet

10. Bilgisayarınızı hangi yaratıcı aktivitelerinizde kullanıyorsunuz ve hangi işlerinizi yaparken bilgisayarınızdan yardım alıyorsunuz?

Örneğin:

Örgü örmek – Ördüğüm kazağın modelinin fotoğrafını çekiyorum ve arkadaşlarıma gönderiyorum.

Yemek pişirmek – Yeni yemek tarifleri geliştiriyorum ve arkadaşlarımla yemek tariflerimizi değişiyoruz.

Fotoğraf – Fotoğraf çekiyorum, çeşitli düzeltmeler yaptıktan sonra internetten arkadaşlarımla paylaşıyorum.

11. Bilgisayarınızda hangi İşletim Sistemi yüklü?

- Windows Mac OS Linux Diğer.....
-

12. Hangi Bilgisayar Programlarını kullanıyorsunuz?

- Ticari/Lisanslı Ücretsiz yada Açık kaynaklı Bilmiyorum
-

13. Aşağıdaki Programlardan hangilerini kullanıyorsunuz?

- Mozilla Firefox / Opera
 Mozilla Thunderbird
 Open Office / Neo Office
 Irfan View/VLC Player/Diğer ücretsiz Viewer ve Player
 Ücretsiz yada açık kaynaklı Grafik/Müzik programları
 Diğer ücretsiz yada açık kaynaklı programlar
 Bilmiyorum

14. Yaratıcılığınıza yardımcı olan bilgisayar programları için yılda ne kadar harcardınız?

- 0 € 1-50 € 50-150 € 150 € dan fazla

15. Bilgisayarınızı yaratıcı aktivitelerinizde kullanmıyorsanız? Neden?

- Yaratıcı değilim
- Bilgisayar yaratıcı olmamda bana yeterince yardımcı değil
- Bilgisayar ve Programlar hakkında yeterince bilgi sahibi değilim
- Yaratıcılık üzerine programım yok
- Kullanmak isterim ama nasıl ve nereden başlayacağımı bilmiyorum
- Yeterince zamanım yok
- Diğer:.....
-

16. Bilgisayarınızı yaratıcı aktiviteleriniz için kullanıyorsanız, nerede?

- Evde Okulda/Üniversitede İnternet cafede
- İşde Arkadaşlarımda Diğer.....
-

17. Bir bilgisayar yardımıyla yaratıcı olmayı öğrenmek istermisiniz?

- Evet Hayır
-

18. Yaratıcılık Programlarını kullanmak için yeterli bilgiye sahip olsaydınız, bilgisayarınızı yaratıcı aktivitelerinizde kullanırmıydınız?

- Evet Hayır
-

19. Yapmak isteyipde yapamadığınız hangi yaratıcı aktivitelerinizi bilgisayarınızın yardımıyla yapmak isterdiniz? Lütfen listeleyiniz.

20. Yaratıcılık sizin için ne anlam ifade ediyor?






A sample of responses for Question 8: Everyday Creative Activities

LimeSurvey	
↓	✖
↓	
1	dancing, photographing, creative cooking
2	Tehnich tvorchestvo, Foto, Oformlenie. doma, podarkov, uslug, zhiznennoi sferi /dazhe vremennoi/
3	programieren, music schreiben, gitarre spielen
4	fotografieren
6	Photography, writing, DJ'ing, cooking, blogging,
7	new combination of existing recipes of dishes
8	Fiction writing
9	My work involves finding creative solutions to problems. My hobbies also involve roleplaying games and other activities that rely on imagination.
10	knitting, dancing, sewing
11	painting, sculpting, writing, photography, assemblage, cooking, parental nurturing of another artist, lover
12	Живопись, рисунок, фотография, вязание
13	I write poetry, i edit a small literary press, i take pictures, i cook
14	Theatre - behind the scenes Dance
15	танец, рисование
16	Vocational: Designing Computer Products, Writing Computer Software Recreational: Playing Guitar, Composing Music
18	Writing, photography, visual art, graphic design, cooking, music
19	writing and some design.
20	Cooking, playing musical instruments
21	foto
22	ballroom dancing
25	Movies of my family, Pictures of my family, Software architecture design and development.
26	programming,sculpting
27	engineering, photography, writing
28	Tanzen,Beobachten von Menschen, Fotos machen aus dem Leben, Kleidung.
29	I write, draw and sometimes cook
30	creative cooking, photography, woodcarving, furnitremaking, musicmaking
31	фотография, музыка, писательская деятельность
32	creative make-up haircut up-do's style
33	music, writing, woodworking, hacking hardware
34	photography
36	работую с хором в школею. Учу детей петь песни не просто пересказывая текст, а обыгрывать эмоционально каждую песню.
37	Run a business, a career in graphic design, photography, drawing, sketching, sculpture, face painting, scrapbooking, interior design, dancing, cooking, gardening, journaling, multimedia, painting
39	творчески знаколюсь с девушками
42	Painting and decorating
43	ruchnye podelki: ukrasheniya, vyazanie vyshivanie, shit'yo, inogda resovanie, latino-amerikanskie tancy,breik dance igra v KVN i mnogoe drugoe ;)
44	blumenstecken,fotografieren,handarbeit,nähen,stricken,häkeln,sticken,knüpfen,lesen,gesellschaftsspiele

A sample of responses for Question 20: "What is Creativity for you?"

LimeSurvey

- 


- 1 Creativity for me is freedom to remove the boundarries
 - 2 Lyboi pcess dolzhen v moem ponyatii bit ´ tvorcheskim , esli uslobiya ne trebuyut obratnogo.
 - 3 habe nicht darüber nachgedacht...
 - 4 .
 - 6 Creativity is not necessarily the creation of something new, originality is rare and more of a red herring than anything else. Creativity is about synthesizing information, data, the world around you, into a context or \"product\" that stimulates introspection, conversation and critical discourse about the world. Creativity is not a skill, or something that is taught, it is a practice and a state of mind as a means of approaching the world and this life. (not too get too profound).
 - 7 to express and show yourself
 - 8 Creativity is the act of creating art from the imagination.
 - 9 Making something new.
 - 10 life!
 - 11 It is the air I breathe.
 - 12 Реализация идей, эмоционального состояния в любой физической форме - музыка, литература, ИЗО и т.п.
 - 14 a personal outlet, away from form and the mainstream
 - 15 Если танец для меня уже само творчество, и в танце я творю, или творю что-то на листе бумаги, то зачем мне компьютер? С другой стороны, творить можно что угодно, творить группы, организации, собирать людей для какой-ниб цели, тогда компьютер может помочь, наверное, зависит от того, в какой сфере ты творишь?
 - 16 To be creative is to find a new way to use inexpensive raw materials to produce a unique and valuable work of authorship.
 - 18 For me creativity is what gives life meaning - or at least one of the key things that gives life meaning. When I\'m not working on one project or another I feel depressed and useless. My computer is the hub of all my creative activities. Without it I would be much less prolific, explorative, and happy.
 - 19 Creativity is a way of life and I couldn\'t imagine doing anything without employing creativity.
 - 20 Putting ideas into actions. Creativity is thinking of something, a way to do something or a way of changing something
 - 21 process-product
 - 22 anything I change or tweak
 - 23 i could be more creative if i had the time and energy but work and kids doesnt allow - I love creativity!!

Appendix 2

Additional Data for Chapter 6:

Qualitative study of a group of participants working with GIMP.

Contents:

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(in German)

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Interim stage and an example of a final result

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Experiment Data Table

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Participant Information Sheet

This is an invitation to take part in a scientific study.

Target group

People without formal training in computer graphics and with an interest in image editing and manipulation on a computer.

Basic computer skills are required.

The purpose of the study

The purpose of this study is to find out how participants cope with using an open source image editing programme, the GIMP, and if the tool is suitable for basic operations with digital images performed by amateurs.

Taking part

Taking part will involve the following steps:

Answer a few questions about your personal information, computer skills and previous experience with image editing tools on computers.

After a short introduction and tutorial, perform a creative task with the GIMP.

After completing the task, answer a few questions about your experience during the session.

Your data

The only information we wish keep from the study are the answers to the two questionnaires, the results of the exercises and your contact information that you provide by your own choice. Your data is anonymous and not associated with your name. Your contact information will be destroyed after completion of the data collection process. The remaining data, to which access is restricted to the research team, is for scientific use only and remains the property of Loughborough University. You can request that your data be destroyed at any time.

INFORMED CONSENT FORM

(to be completed after Participant Information Sheet has been read)

The purpose and details of this study have been explained to me. I understand that this study is designed to further scientific knowledge and that all procedures correspond with the guidelines of the Loughborough University Ethical Advisory Committee.

I have read and understood the information sheet and this consent form.

I have had an opportunity to ask questions about my participation.

I understand that I am under no obligation to take part in the study.

I understand that I have the right to withdraw from this study at any stage for any reason, and that I will not be required to explain my reasons for withdrawing.

I understand that all the information I provide will be treated in strict confidence.

I agree to participate in this study.

Your name

Your signature

Signature of investigator

Date

Please fill in before the workshop



1. Your age

18-32 24-30 31-37 38-44 45-51 52-58 59-65 over 65

2. Your Gender

Male

Female

3. The highest level of education you have achieved

Undergraduate

Vocational

Bachelors Degree

Masters Degree

Doctoral Degree

4. Your occupation

5. How creative do you see yourself (1 – absolutely not creative, 5 – very creative).

1-----2-----3-----4-----5

-

+

6. Are you involved in everyday creative activities, (-these are any kind of activities where you use your imagination and create something new or new combinations of existing things, for example: crafting, decorating, photography, dancing, creative cooking (inventing new dishes), music-making, writing a Blog or any others)?

Yes

No

If your answer is YES, please describe your creative activities.

7. What role does creativity have in your life?

8. Do you use a computer for any creative activities? If yes, what do you use it for?

9. How would you rate your computer skills? (1 - Beginner, 5 - Expert)

1-----2-----3-----4-----5
- +

10. Have you got any experience with digital image-editing tools on computer?

1-----2-----3-----4-----5 (1 – not at all, 5- quite a lot)
- +

If YES, please list the tools you have experience with.

11. How would you rate your interest in acquiring new skills in using software tools for creativity?

1-----2-----3-----4-----5 (1 – no interest, 5- highly interested)
- +

12. What kind of digital creativity are you interested in and what kind of digital content creation and manipulation skills would you like to acquire?

13. Which software -based digital image editing tools do you know?

14. How would your rate your experience with using the GIMP?

1-----2-----3-----4-----5 (1 – no experience, 5- very experienced)
- +

15. How would you rate your experience with using Photoshop?

1-----2-----3-----4-----5 (1 – no experience, 5- very experienced)
- +

16. Have you heard of Open Source Software? Yes No

Do you use any Open Source programmes? Yes No

17. Do you need sometimes to create, edit or manipulate a digital image on computer?

Yes No

If yes, how do you act in this case?

- try myself
- ask for help
- do not do it
- other

Please fill in after the Workshop

1. Please write three words that mirror your experience with
Interesting, difficult, learnable etc.)

GIMP most closely (e.g.

2. What was difficult for you?

3. What did you find easy?

4. How would you describe the user interface of the programme?
(e.g. clear, confusing, intuitive, difficult to understand)

4. Will you use the GIMP in the future?

5. Have you discovered new possibilities that you did not know before? Please describe.

6. To what extent has today's workshop influenced your idea of digital image-editing and manipulation?

1-----2-----3-----4-----5

- +

Please describe.

5. In how far do you believe yourself to be able to acquire further skills for using the GIMP with the help of online Handbook, tutorials and online communities?

1-----2-----3-----4-----5

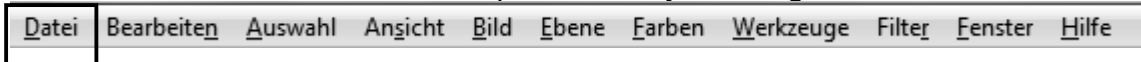
- +

7. Would you like to learn about other open source programmes? If yes, what kind of tools?


8. Please write your contact information if you wish to be contacted one month after the workshop with the purpose of answering a few questions in regard to your progress with the GIMP.


GIMP Tutorial

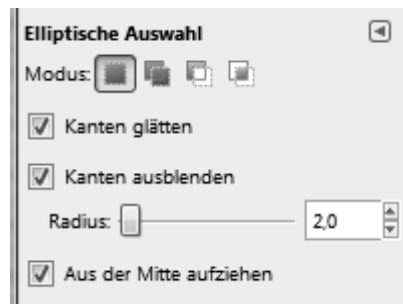
Select from the main menu: File-Open. Select your image from the source folder.



RED-EYES REMOVING


 Zoom In: Select from the toolbox the magnifying glass. Click several times on the image to zoom closer to the face.

 Ellipse selection. Please make the following settings.




Select one eye with the tool.

In the main menu select: Filter-Enhance-Remove Red Eyes. Set Threshold to 65. Click OK. Repeat with another eye.

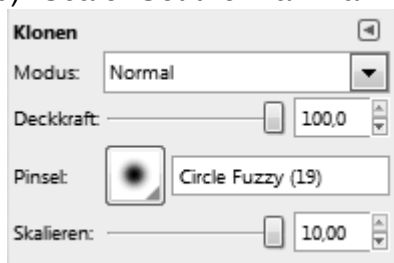
 Zoom Out. Select the magnifying glass tool. Hold the CTRL key on the keyboard and click on the image till the whole image is visible.

BACKGROUND RETOUCHING WITH THE CLONE TOOL

 Select the Clone tool. Adjust the following settings

a) Brush: Select the largest brush size (Circle Fuzzy 19)

b) Scale: Set the maximal value (10)



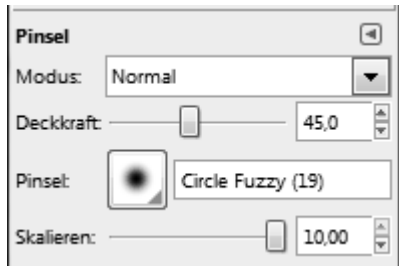
Start retouching with the right side of the image.

Hold the CTRL-key to select the source area of the image. Move the cursor to the destination point and start retouching the area with the left mouse button held. Repeat the procedure till you are satisfied with the result.

BACKGROUND OVERPAINTING



Select the Brush tool and adjust the following settings:

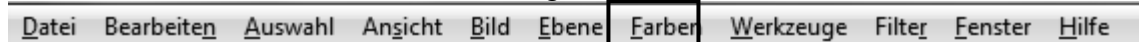


Opacity (about 45%)
Brush (Circle Fuzzy 19)
Brush Size: Scale (10)

With this semi-transparent brush darken the right side of the picture by holding the left button of the mouse.

CONTRAST SETTINGS

Select from the main menu: Color – Lightness/Contrast



You can experiment with the settings to achieve more more intense colors and contrast (for example, set contrast to 20). Click OK when you're satisfied.

ADDING BACKGROUND WITH THE CLONE TOOL

Select the Clone Tool. Settings: justified.

Paint the Christmas Tree brunches on the right side of the image.

ADDING TEXT. ADJUSTING FONT, TEXT SIZE, COLOUR AND EFFECTS

Select the Text-Tool. Adjust the Font, Font Size, Colour and alignment.

Type a text. Click ENTER

SAVING

Select from the main menu: File – Save.

Choose between the file formats GIMP or JPG

Optional:

IMAGE CROPPING

Toolbox: Square Selection Tool

Main Menu: Image – Crop to Selected Area

IMAGE SIZE ADJUSTING

Main Menu: Image – scale (adjust the desirable image size, for example, 800x600 is sufficient for the WEB use)

GIMP Resources: <http://www.gimp.org>

Software download:

German Version: <http://gimp.softonic.de/>

Handbook: <http://docs.gimp.org>

Source Material: Two Snapshots



Interim stage



An example of a final result



An example of a final result



An example of a final result



Qualitative Experiment: Pre-Session Questionnaire answers data table

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	
Participant Number																			
1 52-58	f	MSC	Mathematician		3	Creative activities with children, inventing games	4) Creativity makes life interesting. Every task needs a creative approach	search for inspiration, photo-editing	4	(3)image-editing, retouche, red-eyes removal	5	e-cards with my photos, collages	Photoshop	1	3	no	do not know	try myself	
2 38-44	f	MSC	merchandiser		3	Baking	4) self-expression, pleasure	image-editing, source of information, inspiration	4		3	advanced image-editing, retouche, e-cards	Photoshop	1	2	no	no	try myself, ask someone	
3 24-30	f	MSC	Teacher		3	Drawing	5) Creativity is very important, but there is not always time for it	no	2		5	image-editing, retouching	MS-Office tools	1	1	no	no	try myself	
4 52-58	f	PHD	Lecturer		5	photography, writing	5) Without creativity the life is boring. Almost every action requires some creativity.	simple photo-editing, writing	3		3	image-editing, retouching, e-cards, flyers, business cards	Photoshop, GIMP, MS-Office tools	1	2	y	y	try myself, ask someone	
5 31-37	m	MSC	Network Engineer		4	Presentation s, new dance patterns, photography, new concepts	4) to feel free, unique. Self-fulfillment, motivation to live the opposite to routine	Powerpoint presentations, Brainstorming, mindmapping	5		3	advanced image-editing, retouche, collages	Photoshop, GIMP, Picasa	2	3	y	y	try myself, ask someone	
6 52-58	m	MSC	Chemist		2	photography		no	2		1	retouching	Photoshop	1	1	y	n	try myself	

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18
7	52-58	f	MSC	System Administrator	2	photography	2) I envy highly creative people	search for information, inspiration	5		4	image-editing, retouching	IranView, Photoshop, GIMP	1	1	1	n	try myself
8	45-51	m	BSc	merchandise	5	Music-making, dancing, learning	5) Creativity is an essential part of my life	Search for information, music sheets, pictures	2	1	4	music-, photo-, video-related tasks	MS Office tools	1	1	n	n	ask someone
9	31-37	m	Vocational	Baker	3	Baking, photography	I would like to be more creative	no	2	1	3	photo-editing	none	1	1	n	n	try myself
10	31-37	m	Vocational	electrician	3	Discover something new, new concepts	currently not a big role	no	2	1	3	photo-editing	none	1	1	n	n	I won't do it
11	45-51	m	Vocational		3				2	1	4		MS Office tools	1	1	n	n	ask someone
12	45-51	m	MSC	Teacher	3				4	3	4		MS Office tools	1	2	y	y	try myself
13	45-51	m	MSC	tax advisor	4	decorating, cooking, photography	Creativity makes life interesting	no	4	2	4	photo-, video-editing	Corel Draw, MS Office tools, Photoshop, GIMP	1	1	y	y	try myself
14	24-30	f	BA	dentist technician	5	try out new things, fashion	Creativity is very important in every aspect of my life	simple photo-editing	3	3	5	photo-, video-, music-editing	Online tools	1	1	n	n	try myself
15	18-23	m	Undergrad	student	3	drawing, photography	a hobby	search for information	3	2	5	photo-, video-editing	Online tools	1	1	n	n	try myself
16	31-37	f	MSC	manager	4	cooking, inventing new dishes, decorating	the life without creativity would be mechanical and colourless	Powerpoint presentations	5	2	5	photo-editing	Photoshop	1	2	y	y	try myself
17	38-44	f	BSc	pharmacist	2	photography	I want to enhance my creativity	no	3	2	4	photo-editing, build own website	MS-Office tools	1	2	n	n	try myself, not ask someone
18	59-65	m	MA	Engineer	3	photography, creative solutions	Engineering is impossible without creativity	photo-editing	5	3	5	advanced photo-, video-editing	Photoshop, Picasa	1	3	y	y	try myself, ask someone
19	31-37	f	MA	Software developer	3	programming, inventing new children games	creative thinking is important for work and leisure	no	4	2	4	photo-editing	Photoshop, Picasa, MS Office tools	1	2	y	y	try myself

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18
20	52-58	f	MA	Database Administrator	3	discover new places, travelling	is not very important	no	4	1	4	photo-editing	Photoshop, Picasa, MS Office tools	1	1	1	y	try myself, ask someone
21	38-44	m	Vocational	Carpenter	5	Painting, music-mixing	I am a disabled person. Creativity is the only thing that helps me in my hard times.	music-mixing, researching	3	2	5	photo-, music-editing	Photoshop	1	1	n	n	ask someone
22	52-58	f	MA	Engineer	3	cooking, inventing new dishes, new ideas	creative approach to every activity	no	2	1	2	photo-editing	Photoshop	1	1	n	n	ask someone
23	52-58	f	Vocational	Technical drawing	5	knitting, sawing, video recording	very important in my everyday life	video- and photo upload and sharing	3	1	5	photo-, video-editing	none	1	1	n	n	try myself
24	18-23	f	Vocational	Sport merchandiser	3	photography, photo-sharing, commenting on other's photos	creativity is very interesting	photo-sharing, communication	3	2	5	advanced photo-, video-editing	Picasa, MS Office tools	1	1	n	do not know	try myself
25	52-58	f	BSc	Housewife	3	decorating, gardening	it makes life nicer	looking for inspiration and ideas	4	2	5	Photo-editing, programs for decorating and interior design	Photoshop, MS Office tools	1	1	y	y	try myself
26	over 65	m	BA	Retired	5	photography, art	very important	photo-editing, looking for artwork, commenting	3	4	5	advanced photo-, video-editing	Photoshop, GIMP	2	3	y	y	try myself, ask someone
27	59-65	f	MSc	Retired	5	painting, photography, flower breeding	it makes my life!	looking for inspiration and ideas	2	1	5	photo-editing, build own website	none	1	1	n	n	try myself, I want to do it
28	31-37	f	Vocational	Housewife	4	trying out new things	it makes life colourful	looking for inspiration and ideas, photo-sharing, commenting on other's work	3	2	5	advanced photo-editing, retouching, collages	Photoshop, Picasa	1	2	n	do not know	try myself

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18
29	45-51	f	MA	Housewife		5 painting, photography	it is essential in my life	upload my creative work to my website, comment on other's work	3		2	5 advanced photo-editing, retouching, collages, e-cards	Photoshop, Picasa	1	2	n	do not know	try myself
30	over 65	m	MSc	Retired		4 building out our house, learning, trying out new things	I feel like a new born with creativity in my retired age	looking for inspiration and ideas	5		3	5 advanced photo-editing	Photoshop, Picasa, MS Office tools, GIMP	1	3	y	y	try myself
31	52-58	m	MSc	Teacher		5 Prepare seminars and learning activities for students	Creativity should be taught in schools	looking for information, filtering, prepare e-learning	4		2	5 Blogging, create own website, image editing, presentations	Photoshop, Picasa, MS Office tools	1	3	y	y	try myself
32	31-37	m	Vocational	Carpenter		5 music-making, self-development, inventing games for my kids	life is creative	music-mixing, researching, photo-sharing	4		3	5 Music-composing, photo-editing, digital art	Photoshop	1	3	y	y	try myself
33	45-51	f	MA	consultant		5 prepare seminars, updating my website, creating flyers for my work	We can develop ourselves only because of our creativity	Develop and update my website, flyers, business cards	2		3	5 Desktop publishing, prepare presentation, adverts	MS Office tools	1	1	y	y	try myself

Qualitative Experiment: Answers for the Post-Session Questionnaire

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Participant Number									
1 creative	Use some terms to describe your experience with GIMP	What was difficult for you?	What was easy for you?	How did you find the Graphical User Interface? (clear, simple, difficult)	Will you use GIMP in the future?	Have you discovered new possibilities you did not now before?	In how far has today's workshop affected your concept of image-manipulation?	Do you think you are able to learn the program with the help of online manual, tutorials and	Would you like to learn about other FLOSS creativity support tools? For what purposes?
2 it offers many opportunities, interesting		layers, many buttons on the interface	Interface. Everything is not difficult. It needs training.	easy, clear	yes	retouche, e-cards	5) I understood that I can do than myself	5 yes.	Everything
3 multi-functional, interesting		cloning	the task itself	well-organized, but it needs experience	yes	retouche, working with text	4)	3 maybe, I do not know yer	5 yes. To build a website, create flyers
		toolbox, individual tools	clear, structured	image-editing without professional programs and professional skills	5) It is not that difficult as it seemed to				

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
4	amazing, makes me proud of myself, beautiful	exact mouse cursor positioning, following the steps of the tutorial	retouching, colouring, text	understandable, structured	yes	to edit a picture according to my imagination	4) I will keep the possibilities in mind while taking photos		4 vide-editing
5	clear, learnable, logical	Interface is different to Photoshop	Toolbox is better than in Photoshop, rollover is helpful	Intuitive, not for absolute beginners, clear, structured	yes	cloning, retouching	3) GIMP appears to be very powerful and easy to learn		5 FLOSS creativity support tools for video, music
6	multi-functional	exact selection, cloning, layers		clear	yes	many operations that I did in analog photography are much easier with the GIMP	5) enormous		4 yes, I would like to know the possibilities
7	powerful	nothing	everything	clear, intuitive	yes	yes, everything	5) I did not know that image-editing is that easy		4 yes
8	interesting, easy, learnable	nothing	everything	very clear, easy	yes	everything	5) I though it was much more difficult		5 yes
9	interesting, easy, learnable	nothing	red-eye removal	easy	yes	everything	5)		5 yes.
10	interesting, learnable	nothing	everything	clear	yes	everything I learnt today	4)		4 yes. Firefox
11	interesting, learnable	nothing	cloning	easy, clear	yes	everything	4) it is learnable		5 yes. Mozilla

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
12	interesting, learnable	many elements	red-eye removal	clear, structured	yes	everything I learnt today	4) it is learnable	5	yes. Open Office
13	interesting, learnable	nothing	cloning, background editing, cropping	needs getting used to	yes	everything I learnt today	4) it is learnable	5	yes. For private use and work
14	very interesting	nothing	cloning	clear	yes	everything was new to me	5) it was very helpful and I discovered new opportunities. And that was easy	5	yes. For creative use
15	interesting, easy, fun	nothing	everything	easy	yes	red-eye removing, cloning	5)	4	maybe
16	versatile, creative, user-friendly	nothing	everything	easy	yes	no	3)	5	yes, for private use
17	multi-functional	mouse handling, layers, cloning		many elements. It needs training	yes	everything	5) I thought it was much more difficult	3	yes
18	interesting, powerful	nothing	everything	intuitive	yes	advanced cloning	3) GIMP has interesting functions	5	yes
19	multi-functional, interesting	nothing		easy, clear	yes	yes, retouching, red-eye removing	5) it was much easier than I thought	5	yes, creativity tools
20	interesting, learnable	selection, cloning, red-eye removing	color adjustment	many elements. It needs training	yes, maybe	cloning, red-eye removing	5) it was much easier than I thought	4	yes

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
21	interesting, offers many opportunities, needs training	layers	red-eye removal	clear, structured	yes	everything I learnt today	5) I though it was much more difficult		3 yes, for creativity
22	learnable, multi-tasking	many buttons on the interface, layers, cloning		clear, it needs experience	yes	everything I learnt today	5) I though it was much more difficult		3 yes
23	interesting, amazing, offers many opportunities	layers	color adjustment	clear, structured, it needs more experience	yes	cloning, retouching, red-eyes	5) I thought it was much more difficult		5 yes. For creative use
24	great, fun, powerful	nothing	everything	easy, intuitive	yes	removing disturbing objects, red-eyes	5) it is easy and learnable		5 yes, creativity tools
25	interesting, learnable	cloning needs some training	red-eyes removing	clear, multi-functional	yes	cloning, adding text	4) it is manageable and fun		5 yes, for decorating
26	it is a powerful tool, well-structured	nothing		needs getting used to, well-structured	yes	different cloning options	free programs are not less powerful than the commercial tools		5 yes, for painting
27	interesting, offers many opportunities, needs training	exact selection	using the brushes	many buttonts, but clear	yes	everything	5) never thought that it is suitable for non-professionals		4 yes, to build my own website

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
28	great, powerful, creative, offers many opportunities for experimentation	to remember different steps in a row	individual operations were easy	many windows, it needs getting used to	yes	most of the functions I learnt today	5) it is easy and learnable	5	Yes, for desktop publishing
29	it was a discovery. GIMP's functionality inspires for new approaches in photography	cloning is a great tool, but it needs some training	using the brushes, color adjustment	structured. One needs to get used to where to look	yes, definitely	almost everything	5) I have a lot of plans now with my photographs	4	yes, other creative programs
30	powerful, multi-tasking, customizable tool	nothing	cloning was fun	clear, rollover help is useful	yes	different cloning options	4) I knew many functions, but never tried myself	5	Yes, for video editing
31	great, easy, interesting, useful	sometimes I forgot to switch the layers	red-eyes removing	well-organized, but it needs getting used to	yes!	most of the functions were new to me	5) I will use GIMP to prepare images for my work	4	Yes, mind-mapping

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
32	wide range of functionality, a field for experimentation	nothing	cloning was great. It could produce also unexpected creative results	I liked it. Better than Photoshop	yes	layers, cloning, retouching	5) GIMP offers tremendous opportunities	5	5) yes, for music-composing and editing, audio-visual combination (Vjing)
33	very creative, wide range of functions, interesting tools	cloning needs some training, but it is amazing	adding text	structured, clear. Many tools, but rollover is helpful	yes	almost everything	5) it is easy! Now I can do advanced photo-editing myself!	5	5) yes, for mind-mapping, personal website, flyers