FELIX STALDER
PROPERTY, POSSESSION AND FREE GOODS
SOCIAL RELATIONSHIPS AS THE CORE OF A NEW ECONOMY OF IMMATERIAL CULTURE?

FELIX STALDER DEALS WITH FUNDAMENTAL THESES OF AN ECONOMY OF FREE IMMATERIAL GOODS AS IT IS EMERGING IN THE FIELD OF «FREE AND OPEN SOURCE SOFTWARE», BUT ALSO IN OTHER AREAS OF DIGITAL KNOWLEDGE, CULTURE AND ART PRODUCTION. THE AUTHOR EXPLORES THE QUESTION OF WHAT «PROPERTY» AND «POSSESSION» MEAN IN A CONTEXT IN WHICH THE CENTRAL CHARACTERISTIC OF THEIR DEFINITION, THE EXCLUSIVE POWER OF DISPOSITION, IS NOT GIVEN. THE OUTLINED OVERVIEW OF ALREADY EXISTING ECONOMIC MODELS BASED ON FREELY ACCESSIBLE GOODS PRESUMES THAT THE CONDITIONS FOR THE PRODUCTION AND USE OF DIGITAL GOODS CLEARLY DIFFER FROM THOSE FOR MATERIAL GOODS. PROPERTY AND ECONOMY ARE BY NO MEANS RESCINDED FOR THIS REASON. RATHER, THE CONCEPTS AND PRACTICES ASSOCIATED WITH THESE TERMS ARE CHANGING.

1. INTRODUCTION

This essay deals with phenomena and practices outside the realm of visual arts. While the field of art is first gradually beginning to address the economy of free goods, and net art, following a brief blossoming in the late 1990s[1], exists today in a niche, other areas of digital culture and economy have developed further. This does not mean that the experiences and case studies there represent a kind of «avant-garde», whose example must be followed by other fields. On the contrary: A brief overview suffices to show that the developed models are context-dependent and clearly differ even in presumably unified areas, such as «Free and Open Source Software» (FOSS). Large-scale, industry-relevant software projects – such as the web server Apache – are structured quite differently from artist-centered projects – such as the music software PureData (PD). Thus it cannot be a matter here of drawing direct conclusions for artistic projects from projects remote from art. Instead, the point is to introduce the existent trove of experiences into the discussions intrinsic to art. How much of this is relevant can only be determined by the individual actors of the art business in terms of their own current practice. It is more a matter of generating friction than of offering finished recipes.

2. FREE GOODS AS PROPERTY

With the precondition of free access to and the free use of immaterial goods, the concept of property loses its central defining characteristic, the exclusive power of disposition, and thus becomes problematic. As it is conventionally understood, «property is any physical or intangible entity that is owned by a person or jointly by a group of persons. Depending on the nature of the property, an owner of property has the right to consume, sell, rent, mortgage, transfer, exchange or destroy their property, and / or to exclude others from doing these things.»[2] Property is thus based on a legal title, which defines the specific conditions of the exclusive power of disposition over a thing. In this sense, there are essentially three types of the property of immaterial things, regardless of the legal title upon which it is based.[3]

2.1 COPYRIGHT PROTECTED WORKS

According to Swiss copyright law, works are «intellectual creations of literature and art that have an individual character». The copyright law grants the author, the «natural person, who has created the work», the «exclusive right to determine whether, when and how the work is used.» This right is transferable, and the transferability of the rights of use forms the precondition for the

1 A contemporaneous survey of the «heroic» phase of net art is provided by Tilman Baumgärtel, **[net.art]. Materialien zur Netzkunst.** Nuremberg: Verlag für moderne Kunst, 1999.

2 http://en.wikipedia.org/wiki/Property [01.2010].

3 Strictly speaking there are others, such as legally protected indications of geographical origin and definitions of origination, but these are not relevant in this context.

commodity character of immaterial goods. Copyright guarantees the property character of the work for 75 years following the death of the author. After this period, the ownership of the work is dissolved and it enters the public domain (this does not apply, of course, to single, material copies). As long as it can be unambiguously determined, who the author of a work is and the exact limitations of the work (i.e. how it differs from other works), copyright provides a relatively coherent foundation for determining property claims to a work (having them applied in a case of conflict is naturally a different story). Today, however, copyright appears to have reached its limits in the digital context. On the one hand, its area of application is increasingly expanded, on the other the new possibilities of the treatment and distribution of a work make it more and more difficult to insist on exclusive rights. Current, widespread practices (appropriation, remixing, transformation) cannot easily be covered by copyright. Consequently, with many works it becomes increasingly difficult to precisely determine the authorship and / or the limits of a work. To be able to make better use of the new possibilities of cooperation and distribution, so-called free licenses are frequently used, which invert the exclusive control of the the use of the work into its opposite: by guaranteeing more or less free use. This at least partially de facto suspends the commodity form of the works (but not the economic value creation that can build on these kinds of works).

2.2. PATENT PROTECTED INVENTIONS

Patent law guarantees exclusive use rights for inventions, which meet the requirements of «novelty, non obviousness and susceptibility of industrial application».[4] Since the criterion of commercial use is of central importance to the granting of a patent, patents play virtually no role in the cultural economy. The extension of patentability, especially in the direction of software patents (currently only in the USA), creates a new grey area with negative dynamics for free software,[5] but so far, this has hardly been relevant in the field of culture.[6]

2.3. TRADEMARK PROTECTED PRODUCT NAMES / SIGNS

«Legally, a trademark is a protected sign which is used to distinguish the products or services of one business from another. […] Registering a trademark gives you the exclusive right to use a certain sign for specific goods and services or to grant someone else the right to use it (e.g., licensing). As a trademark owner you can prevent others from using an identical or similar sign for the same or similar goods and services.»[7] A trademark is valid for ten years, but can be renewed indefinitely. It expires when the trademark is no longer used or «decays» into a generic term (e.g. «Bostitch»).

In the area of Open Source Software, trademark protection plays an increasingly important role.

4 http://www.patentlaw.ch/?id=2&leng=1 [01.2010].

5 Andreas Wiebe, «Patentschutz und Softwareentwicklung – ein unüberbrückbarer Gegensatz?», in: Bernd Lutterbeck, Rolf A. Gehring (Ed.), **Open Source Jahrbuch 2004: Zwischen Softwareentwicklung und Gesellschaftsmodell**, Berlin: Lehmanns Media, 2004.

6 Patentability is relevant in the cultural field to the extent that free software projects reach their limits in the audio and video field due to existing patents, and many artists work with proprietary products for this reason. Few of them are conscious of this connection.

7 https://www.ige.ch/en/trademarks/trademarks-first-steps.html [01.2010].

It allows the holders of a legal title to exercise a certain control over the freely available code, as a distinction is made between official versions released under a trademarked name and unofficial versions released under a different name. The term «Open Source» is itself trademark protected and only applies to code released under a license recognized by the Open Source Initiative.[8] The limitation of the use of the code associated with the control of the trademarked name can lead to problems. The Mozilla Corporation, for instance, allows software distributions to distribute the official binary packet (object code) only under the trademarked name «Firefox». Those who want to compile the source code themselves and distribute it, are permitted to do so (it is free software, after all), but not under the name «Firefox». For this reason, the software distribution Debian found itself forced to rename their version of the browser «Iceweasel». In this way, the Mozilla Corporation seeks to prevent «possibly defective versions of their programs from impinging on the good name of Mozilla products».[9]

For a long time, trademark law, which essentially aims to clearly distinguish products from similar products, has only played a negative role in the cultural field, to the extent that artists working with trademark protected symbols were threatened with lawsuits by the trademark holders. An early example is the legendary Swiss punk band Liliput, for instance: the band was called «Kleenex» until the American corporation Kimberly-Clark, as proprietor of the rights to the name of the brand of paper handkerchiefs, forced a name change in 1980.[10] This experience has been repeated countless times since then. Only in recent years has the cultural economy become so differentiated that trademarks are also claimed by cultural actors. Currently it is mainly applied by large museums, not only in the context of logos and names, but also to protect the depiction of the building.[11]

Trademark protection is also interesting in the way it is applied in the area of Open Source software: a specific identity like Firefox can be valuable, even if the functional code it is based on is freely available. The Firefox Corporation has positioned itself in the market by simplifying its identity, in order to find users who trust their offers without really having to understand anything about the code behind it. These users, or rather the web traffic they produce, can be capitalized. Mozilla offers Google as the default search engine and receives a percentage of the advertising revenue thus generated from Google.[12] The value of an enterprise like the Mozilla Corporation is determined, however, not only through the exclusive control of intellectual property, but also, and perhaps even primarily, by the specific capabilities that are generated in the socio-technical configuration of the company.

8 http://www.opensource.org [03.2010].

9 Oliver Diedrich, «Debian vs. Mozilla oder: Namen sind Schall und Rauch», in: **Heise Open** (19.10.2006) http://www.heise.de/open/artikel/Debian-vs-Mozilla-oder-Namen-sind-Schall-und-Rauch-221989.html [03.2010].

10 http://en.wikipedia.org/wiki/LiLiPUT [01.2010].

11 The Guggenheim Foundation, for instance, states: «The names, titles, building images, trademarks, service marks, and logos that appear on the Site are registered and unregistered marks of the Foundation [...]. You may not use the Guggenheim Trademarks without the Foundation's prior, written permission.» http://www.guggenheim.org/terms-conditions [01.2010].

12 In 2006 the Mozilla Foundation received $ 66.8 million in revenues About 85% of this was derived from the agreement with Google. http://en.wikipedia.org/wiki/Mozilla_Foundation#Financing [01.2010].

3. POSSESSION OF IMMATERIAL GOODS

Quite unlike property, which is based on a formal legal foundation, the situation is very different when we turn to the possession of immaterial goods. The circumstances here are substantially more flexible and nuanced. Possession is explained as «the control a person intentionally exercises toward a thing»[13], independent of the formal legal situation. The classical example of the difference between property and possession – the thief in possession of things that are not his property – is less relevant in our context, however. What is more interesting are the forms of possessing immaterial goods, which are either constructed via the detour of material goods or are based on social conventions with or without recourse to the aforementioned legal constructions. At least four different types can be identified with embodied knowledge, possession through association, privileged access, and symbolic shareholding.

3.1. EMBODIED KNOWLEDGE

Knowledge can be embodied either in people or in objects. Especially with technological knowledge, however, the two levels of the technical and the social – or as Bruno Latour phrases it, of the «humans» and the «non-humans» – are hardly to be separated in practice.[14] Rather, this involves heterogeneous networks of people, who produce specific effects (such as a browser, a search engine or an art work, for instance) with specialized artefacts.

Materialized knowledge, which can be far greater than the sum of the single components, is the central foundation, along with exclusive knowledge (whether in the form of intellectual property or company secrets), of the immaterial value creation of companies or other organization. It is often the specific configuration that makes it possible to generate added value, even if the single elements are standardized (Google's infrastructure, for instance, consists of tens of thousands of cheap servers), or if the knowledge circulating through the network is basically accessible to everyone (as in the case of IBM's use of Open Source software). However, constructing these kinds of networks is very complex and time-consuming. Networks (like all social organizations) are path-dependent, which means that they are not only a «status quo», but hold their entire history, from which specific further development paths may be more or less successfully taken. For this reason, it can be worthwhile to sell these kinds of networks as a whole, in order to subordinate the potentials produced in them to specific strategic goals. This is one reason why Microsoft was interested in buying Yahoo!. The acquisition applied not only to a bundle of IP titles and hardware, but to an organically evolved network with a history and specific potentialities for the future.

Yet the risk in these kinds of takeovers is great: although the network is temporarily (immediately after the takeover) in the possession of the buyer,

13 http://en.wikipedia.org/wiki/Possession_(law) [01.2010].

14 Cf. for instance, the case study by Bruno Latour, **Aramis, or, The Love of Technology** (trans: Catherine Porter), Cambridge: MA, Harvard University Press, 1996.

this possession is not based on a stable property title, but rather on a social convention (which is naturally also based on contract agreements that aim to continue to reproduce the network). If parts of the network then break this convention (for instance, if employees quit or work less productively, because the new «culture» is no longer amenable to them), the network, or at least the capabilities embodied in it, dissolves, and the new owner can do little to prevent it.

3.2. POSSESSION THROUGH ASSOCIATION

It is possible to have more or less exclusive power of disposition over certain styles, elements of style or semiotic objects, without this power of disposition being based on a formal property title. Possession is then based on the named feature being associated with a certain person. One example is found in the association of certain, quasi anonymous line figures with Keith Haring. The strong association can make it impossible for others to appropriate these kinds of elements without appropriation itself becoming a topic of discussion (neither in a positive nor in a negative sense). This de facto exclusivity is the foundation for making the figures available to others for payment. On this basis, Keith Haring designed various products and product posters, such as for Absolut Vodka in 1986.[15] Possession through association is based on a social consensus, which prescribes to some extent bindingly which forms of appropriation are to be understood as positive and which as negative. The art system as a relatively homogeneous and small field has suitable means at its disposal for stabilizing possession through association, because the reputation of the individual participants is based on not violating the system-wide consensus (which is often only implicitly articulated), although this, of course, does not exclude certain strategic taboo violations and confrontations. The effectiveness of these social norms also makes possession through association one of the central regulating mechanisms. Artists protect their works by becoming well known for them and thus strengthen the association quite directly. Formal legal regulations have a crucial significance primarily for the users. In other cultural subcultures as well, works are turned into property primarily through association and group norms and less through legal claims. Among professional magicians, for instance, using the tricks of other, active magicians in one's own show is considered reprehensible. Noncompliance is punished with ostracism within the professional community, which can certainly have social and economic consequences.[16] The way new creations are dealt with among stand-up comedians[17] and star chefs[18] is similarly structured.

Outside these kinds of relatively closed systems, the normative binding function of association is often much weaker. This is very actively

15 http://absolutad.com/absolut_gallery/artists/pictures/?id=960&_s=artists [01.2010].

16 Jacob Loshin, **Secrets Revealed: How Magicians Protect Intellectual Property Without Law** (July 25, 2007), Available at SSRN URL: http://ssrn.com/abstract=1005564 [03.2010].

17 Dotan Oliar, Christopher Jon Sprigman, «There's No Free Laugh (Anymore): The Emergence of Intellectual Property Norms and the Transformation of Stand-Up Comedy», in: **Virginia Law Review (December)**. Vol. 94 No. 9, 2008.

18 Emmanuelle Fauchart; Eric von Hippel, **Norms-based Intellectual Property Systems: The Case of French Chefs**. MIT Sloan Working Paper 4576-06 (January 2006) URL: http://ssrn.com/abstract=881781 [03.2010].

demonstrated by Migros, which has again and again taken over established semiotic elements so that the reference remains, but the corresponding legal title or social consensus is not violated. This is not always the case, however. In the late 1990s, Migros offered the «Freitag [‹Friday›] bags» that had just become famous at the time as «Thursday bags». Not only did the Freitag brothers threaten a lawsuit for plagiarism, but a social consensus quickly formed with the opinion that the design of the bags is so closely associated with the original producers that Migros' actions were not only possibly illegal, but also certainly immoral. The resultant bad publicity proved to be highly effective, and the bags were very quickly withdrawn from sale again.[19] The way that the Migros appropriation developed into a PR disaster has to do not only with the Goliath vs. David aspect. It is also important that the entrepreneurs of the creative industries are located exactly at the intersection between culture and commerce, where objects, even though they are commercial products, are strongly associated with individual creativity and therefore also take recourse to a cultural value system, which specifically supports possession through association. This is not the case when a purely commercial company appropriates style elements from another purely commercial company. Here, everything is permitted that is not forbidden. The case of the «Thursday bags» shows that the possibility also exists outside the art system of stabilizing these kinds of normative forms of possession. It does seem, however, that a certain proximity to the creative professions is necessary for this.

3.3. PRIVILEGED ACCESS

There are many ways to modulate the principally free access to works. One of the axes, along which this kind of modulation can take place, is time. Being the first one to see something can be (socially and / or economically) valuable, even – or perhaps especially – if the work is accessible to everyone after that. Another axis results from physical distance. In the theater, seats in the front are more expensive than those in the back. Another axis can be the degree of mediatization. The recording of a performance, even if it can be seen in real time and even if the camera is closer to the performers than any visitor, is nevertheless a substantially different, usually less valuable experience than that of being directly on site. Another axis is that of personalization, which individualizes and strengthens the relationship between the producer and the recipient. Readers, for instance, may spend hours waiting in line to have a copy of their book signed by the author, possibly even with a personal dedication. This undoubtedly raises the value of the book, even if that is not necessarily reflected in its monetary value.

3.4. SYMBOLIC SHAREHOLDING

The classic example of an economic transaction leading to quasi possession through symbolic shareholding is the sponsoring of events or ob-

19 Christoph Doswald, «Donnerstag, Freitag und Robinson»,in: **Ironisch / Ironic**, exhibition catalogue Migros Museum für Gegenwartskunst, Zürich, 1998.

jects with a high social value of their own, which can be transferred through symbolic shareholding. The football stadium built in Munich by Herzog & De Meuron, the focus of intense attention and positive emotionality, is called «Allianz Arena». This allows the insurance company Allianz to have a symbolic share in events essentially alien to its nature and thus to absorb a portion of this social energy. There are many analogous examples in sports as well as in the cultural sector. The sponsor becomes «part of the experience», as it is propagated in the context of the EURO08.

Another form of symbolic shareholding was developed, for instance, by the project Blender[20], which produces the Open Source 3D animation suite of the same name and Open Source animation films. Their most recent work, the animation **Big Bug Bunny** premiered in Amsterdam in early April 2008. To pre-finance the project, there was an offer to order the DVD during the production phase. In return, the purchasers received the film before it became freely public, and in addition, their names were mentioned in the credits as members of the production team. About a thousand people pre-ordered the DVD and thus contributed a relevant portion of the production costs. For this reason, their share in the production was more than just symbolic, but also represents one of the diverse possibilities for becoming active in the community. This type of a community's share in projects forms the foundation for economic models of free goods, which are to be discussed in the following.

4. ON THE ECONOMY OF FREE GOODS, EXAMPLE OF FREE SOFTWARE

As mentioned above, the free availability of digital goods is not to be equated with the absence of an economy of such goods, not even then if we understand economy – as in the following – in the narrower sense as (monetary) economic relations. For this reason, I will concentrate on the aspects that let the users of these services pay, even though the actual software is freely available and usable. In other words, I will address primarily the demand side and not the analysis of why and how Free and Open Source Software (FOSS) is produced.[21]

4.1. WHAT IS FREE AND OPEN SOURCE SOFTWARE (FOSS)?

In terms of ideology, there are clear differences between Free Software and Open Source Software. Whereas the former indicates the political aspects of free cooperation, the latter emphasizes its efficiency. The term Free Software stems from the mid-1980s, the term Open Source was introduced in the late 1990s to take the ideas closer to the business world.[22] In practice, the differences are not so far apart, because the basic principles formulated by the founder of the Free Software movement, Richard Stallman, the so-called «four freedoms», apply equally to Open Source Software.[23]

20 http://www.blender.org [03.2010].

21 This question has already been dealt with very early and quite extensively, whereby a pluralism of motivation (intrinsic interest, reputation, cooperation, learning, problem-solving, merit, etc.) has been repeatedly noted at the level of individual developers. For a summary, cf. Steven Weber, **The Success of Open Source**, Cambridge: MA, Harvard UP, 2004.

22 Volker Grassmuck, **Freie Software. Zwischen Privat- und Gemeineigentum**, Berlin: Bundeszentrale für Politische Bildung, 2002. URL: http://freie-software.bpb.de/ [01.2010].

- Freedom 1: The program may be run for any purpose.
- Freedom 2: The program may be studied and changed.
- Freedom 3: The program may be distributed.
- Freedom 4: The program may be improved and distributed to provide a benefit for the community.[24]

These freedoms can be legally enforced[25] with free licenses, especially the GNU General Public License (GPL).[26] Every user of the software is assured of these four freedoms, as long as they uphold the other conditions of the license. In the case of the GPL, these freedoms must be redistributed along with the program. Once a code has been published under the GPL, it can never be published again under a different license (unless all the rights holders agree).[27] Persons and companies that have no formal relationship with one another are thus able to cooperate or build on the works of others without exposing themselves to the risk of suddenly being confronted with copyright demands. This is an essential precondition for long-term cooperation in open networks.

4.2. COMMERCIAL DEMAND IN THE AREA OF FREE SOFTWARE

Whereas Free Software was initially created as a counter-reaction to the emergence of a commercial, proprietary software industry[28], in recent years an industry of its own has developed as more and more companies use and produce FOSS.[29] In this industry, which is part of the much broader, in part wholly noncommercial or even anti-commercial FOSS movement, essentially four areas have developed, which structure the economy from the demand side.[30]

4.2.1. Services for the Community as a Whole

Free Software is usually coordinated in formally open networks[31] with the help of e-mail lists, CVS servers (which administer the actual code), blogs and other communication means. Whereas those networks that are primarily socially structured function very well in many respects, they are not suitable for certain, essential tasks of more complex projects. This is not least of all the case, because open networks cannot be legal entities. Consequently, in recent years separate foundations have been created for almost all larger software projects, which can take over the relevant tasks. One of the most important examples of this is the Apache Foundation, founded in 1999.[32] This founda-

23 Cf. Free Software definition: http://www.fsf.org/licensing/essays/free-sw.html [01.2010], and the Open Source Definition: http://opensource.org/docs/osd [01.2010].

24 A special feature of software, for which there is no direct analogy in most other cultural goods, is the distinction between source code and binary code. Source code is the code written in a programming language. In order for a machine to be able to read it, it has to be transformed into binary code consisting only of 0 and 1. This means, however, that it can then no longer be read and changed by most people. That is why it is important that not only the program that can run on the computer is freely available, but also the source code that can be changed and read. With so-called proprietary software the source code is a strictly kept company secret, and the users receive only the binary code.

25 http://gpl-violations.org [03.2010].

26 http://www.gnu.org/copyleft/gpl.html [12.2008].

27 The GPL has recently been revised and is now available as Version 3. Several further obligatory rules have been introduced here, which react to dangers for the aforementioned four freedoms that are specific to software. For a brief explanation of the changes, see Richard Stallman, **Why Upgrade to GPLv3** (20 July 2007), http://www.gnu.org/licenses/rms-why-gplv3.html [01.2010].

28 Williams, Sam (2002). **Free as in Freedom. Richard Stallman's Crusade for Free Software**. Sebastopol, CA, O'Reilly URL: http://www.oreilly.com/openbook/freedom [01.2010].

29 Bruce Perens, «Open Source – ein aufstrebendes ökonomisches Modell», in: B. Lutterbeck, Matthias Bärwolff, R. A. Gehring (Ed.), **Open Source Jahrbuch 2007 – Zwischen freier Software und Gesellschaftsmodell**, Berlin: Lehmanns Media, 2007. http://www.opensourcejahrbuch.de/portal/scripts/download?article=osjb2007-02-03-perens.pdf [01.2010].

30 This is not the only way in which business models can be cate-gorized in the FOSS sector. A closer look at commercial software producers identifies six different clusters that only partially

tion provides organizational, legal and financial support for more than fifty free software projects. The foundation is financed (roughly US$ 150'000) by donations, primarily from large companies, which have a strong interest of their own in the positive further development of one or several of these projects. The largest single sponsor of the Apache Foundation is Google.

There are many comparable examples, in which a foundation finances a community, which supports this as a whole by providing certain organizational services. Outside the field of software, the Wikimedia Foundation is certainly the most significant.[33] Its task is to promote Wikipedia and its affiliated projects, especially by taking over responsibility for the meanwhile very extensive and thus expensive infrastructure[34], but also by co-organizing conferences and other events. The Wikimedia Foundation is financed by individual (small) donations and donations of equipment amounting to about US$ 6'000'000 in 2007 – 08.[35]

As a broad generalization, it may be noted that the larger and more established a community is, which is structured as a formally open network, the greater the demand for specialized services, which are provided for the community as a whole. Probably because of their size, successful projects also appear to be able to overcome the problem of «free riding».[36] Which services these are and who within the community is willing to contribute how much for them differs widely from case to case. In the case of the artist-centered music software PureData, these services are also offered free of charge by institutions that intensively rely on this software in their work. In this case, the server infrastructure is provided by the Institute of Electronic Music and Acoustics in Graz.

4.2.2. Dual Licensing

A consequence of the GPL is that all software based on GPL code must be redistributed under the GPL. Not all users want to be restricted to these conditions. This results in the demand for the acquisition of a program under a non-free license as well. This is possible if the program is licensed twice: once free for everyone under GPL, once for a fee under a classical license, so that the license holder is not obligated to distribute their product under the GPL. One of the most prominent examples is that of QT, a so-called «cross-platform application development framework, widely used for the development of GUI programs».[37] This toolkit enables the programming of relatively simple graphical user interfaces (GUI), such as those used today for

overlap with the four models I have presented. Among other reasons, the difference is the result of companies focussing on the offer side. Cf. Carlo Daffara, **Business models in FOSS-based companies** (2006). http://opensource.mit.edu/papers/OSSEMP07-daffara.pdf [01.2010]. Cf. also: Raphael Leiteritz, «Open Source-Geschäftsmodelle», in: B. Lutterbeck, R. A. Gehring (Ed.), **Open Source Jahrbuch 2004 – Zwischen Softwareentwicklung und Gesellschaftsmodell**, Berlin: Lehmanns Media, 2004. http://www.opensourcejahrbuch.de/portal/scripts/download?article=II-5-Leiteritz.pdf [01.2010].

31 By formal I mean that formal membership in an organization (as an employee, for instance, or otherwise tied by contract) or a formal title are not necessary to participate in the project. These kinds of projects naturally have mechanisms at their disposal to close certain processes.

32 http://www.apache.org/foundation [01.2010].

33 http://www.wikimedia.org [01.2010].

34 By the end of 2006, Wikipedia was the sixth most frequently visited destination online with approx. 285'000 hits per minute. http://wikimediafoundation.org/wiki/Frequently_Asked_Questions - How_is_the_revenue_spent.3F [03.2010].

35 Roughly a third of this amount was acquired through individual donations. The rest came from foundations and other institutional funding. Annual Report, 2007 – 08, http://wikimediafoundation.org/wiki/Donate/Transparency/de [03.2010].

36 Free riding is the term used in economics to designate the use of a general resource without individually covering its costs.

37 http://en.wikipedia.org/wiki/Qt_(toolkit) [01.2010].

the vast majority of all the programs on the market. QT is produced by the Norwegian company Trolltech and used, among others, in the project KDE[38], which is currently the most extensive Open Source project.[39] Following vehement controversies, Trolltech decided in 2005 to license the program, which was originally not under GPL, under GPL for all platforms as well, but at the same time to also offer other license conditions for a fee. In this way, the toolkit became quite widespread and established as a standard tool for interface developers, but on the other hand, it is also available to companies that do not want to distribute Free Software themselves. For these companies, it is worth paying for a product that they could also use without payment. Yet even for the paying companies it is an advantage that the program is also freely available, because this way it remains guaranteed that many developers work with this program. The disadvantage of dual licensing is that all developers must agree to this model. In practice, this leads to the situation that the circle of those actively working on the project remains limited to the employees of the company managing the rights. However, this is not necessarily a major disadvantage.[40]

Most works of visual art are not produced in open, cooperative networks, but rather by individual artists or small, mostly relatively clearly structured groups. These generally hold all copyrights, so it would not be a problem to re-license a work, previously under a free license, for the market again, for instance in a limited, altered edition.

4.2.3. Customizing

Free and Open Source Software, especially when it is developed in formally open networks (which is usually the case), is generic for structural reasons. For it is the generic core of a problem that is shared by many and around which cooperation is organized in larger groups. The application of software, however, is almost always unique, especially if it passes a certain stage of complexity. No two implementations of a web server or a Content Management System (CMS) are identical, because the tasks solved using the software are different from case to case. A great demand for services arises to bridge this space between the generic, cooperatively produced and freely available solution and the unique application that is relevant in a specific individual case. This demand is met by an already highly differentiated, rapidly growing offer of services, ranging from tiny enterprises to multinational corporations like IBM or HP.

It can generally be observed that despite all copyability, technologically complex software works are highly dependent on context, and the transfer from one context to another, for instance from one server to another, can be very difficult. In this sense, customizing means not only adapting existing generic software to specific requirements, but also the transfer of an existing software configuration

38 http://www.kde.org [03.2010].
39 Cf. Eva Brucherseifer, «Die KDE-Entwicklergemeinde – wer ist das?», in: **Open-Source-Jahrbuch 2004**, (op. cit.) http://www.opensourcejahrbuch.de/portal/scripts/download?article=I-6-Brucherseifer.pdf [01.2010].
40 In January 2008 the company Trolltech was taken over by Nokia for $ 150 million.

to a different use context, whereby then only a minimal change is needed in relation to the appearance. In the field of online art, issues of archiving or server migration belong to this area.

4.2.4. Support

Next to customization, the area of support certainly creates the greatest demand for commercial services based on free goods. A central criticism of products produced in open networks is that responsibility and accountability are often unclear. Although most problems can also be solved within the open network (by consulting forums and mailing lists), this can take a great deal of time and effort and may also presuppose a high degree of knowledge on the part of the person trying to solve the problem. If a feasible and efficient way to solve problems that may occur is lacking, the question arises as to the mid-term and long-term usability of free goods. This problem leads to a greater demand for support services, which is all the greater the more dynamic the environment is, in which the software is used. The most well known example of a business model based on the demand for support services (and customization) is probably the company Red Hat, which has made support and training for their own, free platform the central element of their business model for almost ten years.[41] The company Canonical[42], which operates the extremely successful GNU / Linux distribution Ubuntu[43], pursues a similar strategy.

Questions of long-term investment security also play a role in many aspects of the art and cultural market and thus also the question of support. In the field of very fragile, unstable media, especially in the highly dynamic online area, these questions are especially urgent. What exactly the support needs to consist of and which services can be provided depends very much on the individual artistic work, the value of which is to be maintained over a long period of time.

5. PERSPECTIVES

We are now only at the beginning of a development that will lead to a differentiation of the forms of owning and possessing immaterial goods, processes and other concentrations. Some of them will be based, as in the past, on exclusive legal titles. Other forms have already long been important in the field of culture, as the references to magicians, comedians and cooks have shown. These and similar practices, with or without free licenses, will probably even grow in significance. Some of these new forms will directly generate new business models, others center around social valorization that can only be indirectly translated into monetary dimensions.

What appears essential to me is that the dimensions, according to which this differentiation takes place – legal versus normative regulations, exclu-

41 Werner Knoblich, «Erfolgreich mit Open Source – Das Red-Hat-Open-Source-Geschäftsmodel», in: B. Lutterbeck, Matthias Bärwolff, R. A. Gehring (Ed.), **Open Source Jahrbuch 2006 – Zwischen Softwareentwicklung und Gesellschaftsmodell**, Berlin: Lehmanns Media, 2006. http://www.opensourcejahrbuch.de/portal/scripts/download?article=osjb2006-04-02-knoblich.pdf [01.2010].

42 http://www.canonical.com [03.2010].

43 http://www.ubuntu.com [03.2010].

sivity versus free access, financial versus social added value – are not to be understood as opposites and fixed categories, but instead represent the ends of a continuum. Most concrete cases, however, will not play out at these ends, but rather somewhere in the middle, where all these elements relate to one another in the most diverse mixed forms and are first able to become stabilized in their specific relation to one another.

Free goods and commercial value creation are not fundamental opposites. On the contrary. It is the specific features of these goods that create entirely new needs. It could be briefly formulated that what is specific about services based on free goods is not the focus on exclusive possession, but rather the stabilization of social relationships.

Naturally the field of Free Software is structured quite differently from that of (online) art, not least of all because online art also does not necessarily fall into the realm of free goods. Nevertheless, I find it plausible to presume that the (monetary) economic potential in this field could also be found primarily in the establishment and stabilization of social relationships, and less in conventional practices of exclusive possession. In terms of these kinds of expectations, classical objects, as they are distributed by established institutions in the art market, will remain central, not least of all because the market, with its conventions and practices, has been created exactly for these kinds of objects. If online art wants to play by the rules of the established art market, then it seems to me that Peter Schneemann's conservative analysis in this publication – that online art will have to adapt to the logic of objects – is thoroughly correct. I am optimistic, however, that the market can change, similarly to the way this is already more or less clearly evident in other fields of software, knowledge and cultural production.

Translated from the German by Aileen Derieg

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This text is part of the publication **Owning Online Art – On the Sale and Ownership of Web-based Works of Art**, edited by Markus Schwander and Reinhard Storz. UAS Northwestern Switzerland, Academy of Art and Design. Basel, 2010