Taking Instead of Buying: Towards an Economics of Free Software

By Stefan Merten

What is free software?

There are other ways of acquiring software than just buying the commercial software that's available on the free market like any other goods. There are, for example, the so-called Shareware models whereby customers wanting to use the software pay a fee to the producer. There is also the possibility of bootleg copies, an illegal means of acquiring software.

This article doesn't deal with any of these but is about free software, which is not only almost cost-free; it also, more significantly, incorporates regulations that guarantee freedom for the user. Besides the right to use the software, the user also has the right to study the sources of the software, modify them, and pass the original or modified version on.

The history of free software

The history of free software is inseparable from Richard M. Stallmann, the Free Software Foundation and the Gnu Project. Stallmann, who was accustomed to unlimited access to software, became increasingly annoyed about the shortage of accessible software due to increasing copyrights and secrecy. He founded the Gnu Project in 1984 with the aim of creating an operating system similar to Unix, but independent. A big part of this aim has been realised in the intervening years through a number of high quality programmes, but the kernel, the heart of the new operating system, was never completed.

Into this situation came Linus Torvalds, back in 1992. He was searching the Internet for people who shared his interest in developing a kernel. With breathtaking speed, programmers from all over the world came together and very quickly developed a system that is now known as Linux. As this was only possible due to software developed by Gnu, and the current Linux edition is mostly Gnu software, the system would be more accurately described as Gnu/Linux.

Licence to copy

Richard M. Stallmann's clever trick when founding the Gnu was to invent the General Public Licence (GPL), permitting what other licences forbid: free copying and sharing of software, study of its source code, modification of the software, and the passing-on of modified versions.

The only prohibition is the re-privatisation of software licensed by a GPL: when GPL software is passed on, the receiver has the same right to its source code as the giver. The independence of GPL-licensed software is carried through to any product which has evolved from the original version, or a modified version.

Other software licences besides GPL have been invented. Some of them allow software to be re-privatised, meaning that donors are not obliged to pass on the source code. This may be termed Open Source software. Free software, in the truest sense, is software licensed by a GPL, offering users the greatest possible freedom1.

The 'free software' community

In the space of a few years an increasing 'fan-club' of 'free software' users (especially of Gnu/Linux) has come into being. There are many web sites based on Gnu/Linux, numerous Gnu/Linux user-groups, many conferences and events - each attracting over 10,000 participants, and some Gnu/Linux-related magazines.

Some members of this community are constantly working on the free software and inventing new software, which is in most cases of an outstanding quality matched only by a few commercial producers. Even Microsoft can't compete in terms of quality.

Aside from the practical gains enjoyed by free software users, within the community of fans there is an enthusiasm for the principle. Many are inspired by the idea of having fun programming software whilst also doing something for the common good.

Some Projects

Gnu/Linux and Apache

Gnu/Linux and the Apache Web Server are the beacons of the free software movement. Gnu/Linux is an operating system, which, in the last few years, has not only become a competitor with Microsoft, but has started to hold an increasing share of installed systems. Even giant Microsoft has recently begun to recognise the threat and respond with smear campaigns.

Research shows that user-numbers of the Apache web server are far higher than those of Microsoft or Netscape. Internet providers especially, for whom high quality software is vital, rely to a large degree on the joint forces of Gnu/Linux and Apache.

Other free projects for the production of IT products

Inspired by the invention of free software, over the past months and years other projects have been developed, attempting to transfer the principles of free software to other areas of the IT market.

- The Open Theory Project2 tries to develop theoretical and other texts. With the help of a web interface, readers can comment on the texts, which were installed and are managed by a maintainer.
- The projects nupedia3 and Encyclopaedia Aperta4 are aiming to develop a free encyclopaedia.
- Free music is promoted amongst others by projects like GNUsic5 and the European MP3 group6. Free music isn't taken from commercial CDs but is music, which has been offered free from the start and can be distributed free (in line with the GPL principle).

Free projects aimed at developing material goods

Even in the material goods sector, projects have been developed producing free information documents such as circuit plans or construction plans necessary for the production of goods.

Several projects deal with the development of electronic elements on different levels. The range now covered includes anything from structures on chips (Free IP Project7) and electronic chips themselves

(OPENCORE.ORG8), to free CPUs (Freedom CPU9) and electronic circuits (OpenCollector10). The most ambitious project is the OSCar-Project11, whereby a free car is to be developed. At the moment they are working on the basis that construction plans, which may be used or modified under a licence similar to a GPL, may be used by a company in the commercial sector to produce cars. The ensuing product would be cheaper than commercially-developed ones. The producer doesn't have to pay for development, which means these costs are not passed on to the consumer. This trend towards free material goods means that in theory, one day free goods will replace the whole 'goods' sector.

Free software as an economic model

'Free goods' is incomprehensible within the framework of the concepts of exchange, work and money. For many it is already hard to understand why software developers don't ask for payment for their work. All things considered, 'free products' can only be considered as a totally new economic model, which has never previously existed.

Neither paid work nor subsistence

Because the producers of free products are not paid and usually don't want payment, free software and other free products have no value. Like the air we breathe, they don't have to be paid for but nevertheless are available in surplus for those who need them. At the same time, producers of free products don't invest effort solely for themselves. Although a producer's own practical needs play a role in the development of a free product, many producers of free goods work with others to modify their products, producing goods which are mainly for the use of others. This concept differs from subsistence economics: work carried out only for the need of an individual or a particular group.

Neither exchange nor gift

Free software and other free products are not objects of exchange. Free software is available to anybody who needs it. It's there for the taking. Even someone who hasn't contributed to the development of free software - like the average user of Gnu/Linux - can use it to its full extent, look at the sources, learn from them and then pass them on. It is also the case that a person who has contributed can't expect to get anything for it.

Having said that, this process can't be described as 'giving a gift', because the product is not designed for a particular person. At best, it might be described as a gift to humanity.

The role of digital copies and the internet

This totally new economic model within this sector was historically only made possible through the invention of the digital copy and its wide circulation. It is computers which have brought about the massive reduction in unit costs of digital copying, making possible, in turn, the infinite copying of data without any loss of quality. This data can include software, web pages, recipes, travel reports, letters, pictures, circuit plans, music, etc.

The internet, which can be understood as a huge distance-copying facility, undoes the limitations of a local computer and makes world-wide networking possible. The internet can bring together, in a historic new way, people from all over the world who share the same interests. Free software is an example of how useful this global network can be.

Individual development as the driving force

Although the producers of free software don't get any money, they do get something out of writing software. One of the most important motivations is the fun they have writing computer programmes. This, for some, is enough. Its practical uses for oneself or others also plays an important role in the production of free software. Producers are focused on the software's user-value and quality. Others again enjoy working in a like-minded team. Those who work as maintainers of free software projects need to enjoy communication, organization, and decision-making that reflects the consensus of the project. And then there are those who write software because they want to give something to the world.

The motivations behind the development of free software can be summarized in the wish for self-fulfillment. This personal experience is different for everybody. Authors of free software mostly have other means of income and don't need any other external motivation for their work: the work is worthwhile in itself.

Just take!

This leads, then, to a new economic model whereby available products exist in surplus and everyone can just take what they need. An exchange of valuables, as such, is no longer necessary, but still the best possible provision of goods is guaranteed.

If this attitude, which is already well-developed in the realm of free software, could be extended to other IT sectors and later, to material goods, this new economic model could potentially replace traditional economics with its concepts of exchange, work and money. Some moves to transfer the principles of free software to other products are already happening and the recent acceleration of such developments might lead to a much faster change than is currently anticipated.

Stefan Merten (from Kaiserslautern) has a diploma in computer sciences. For many years, he has been working as a computer specialist in the political scene. In summer 1999, he founded the project Oekonux (http://oekonux.de) where he functions as a maintainer. The project discusses questions such as those described in this essay. Most of the ideas were actually developed within the project.

LINK TO:
Addresses of Internet projects mentioned:
1   GPL: www.gnu.org/philosophy/categories.html
2   OpenTheory-Projekt: www.opentheory.org/
3   Nupedia: www.nupedia.com/
4   Encyclopaedia Aperta: www.opentheory.org/proj/enzyklopaedie
5   Projekt GNUsic: www.gnusic.net
6   MP3-Verbund: www.mp3eu.net/
7   Free IP project: www.free-ip.com
8   Open cores: www.opencores.org
9   Freedom CPU: http://f-cpu.tux.org/
10 Open collector: http://opencollector.org
11 OSCar-Projekt: www.theoscarproject.org/)