

Software Protection



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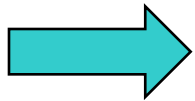
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Economics of Intellectual Property

Information goods

- Ubiquity
- Non-excludability
- Non-rivalness in use



Problem of underproduction

Computer and Software

Development phases

- Requirements
- Definition
- > Specifications
 - General concept
 - Detailed concept
- > Modules in detail
 - Coding
- > Source Code
- > Object Code
 - Testing
- > Manual

Quality

- Correctness
- Efficiency
- Robustness
- Easy Maintenance
- User friendliness

Software Components

- **Computer program**
 - Object format
 - Source code
 - Description of data and structure
 - Description of processing procedures
 - Information on dialogue with user
 - Information on development, error correction
- **Documentation**
 - Specifications
 - Maintenance documentation
 - Program description
 - Flow charts
 - Program sequence
- **Manual**

EU Software Directive 1991

Article 1 Object of protection

1. In accordance with the provisions of this Directive, Member States shall protect computer programs, by copyright, as **literary works** within the meaning of the Berne Convention for the Protection of Literary and Artistic Works. For the purposes of this Directive, the term 'computer programs' shall include their **preparatory design material**.
- 2. Protection in accordance with this Directive shall apply to the **expression** in any form of a computer program. **Ideas** and principles which underlie any element of a computer program, including those which underlie its interfaces, are not protected by copyright under this Directive.
- 3. A computer program shall be protected if it is original in the sense that it is the author's own **intellectual creation**. No other criteria shall be applied to determine its eligibility for protection.

Software as protected Work

- Literary Works
 - Specifications
 - Object Code
 - Source Code
 - Manuals and Documentation
- Technical and scientific Graphs
 - Flow Charts
- Film works
 - Video game, multimedia
- Landmark cases
 - Bundesgerichtshof, IIC 1986, 681 - „Inkassoprogramm“
 - Bundesgerichtshof IIC 1991, 723 - „Betriebssystem“

Idea-expression-dichotomy

- Delineation idea/expression - question of abstraction
- Algorithms
 - Complete Set of well defined rules for the solution of a problem in a certain number of steps
 - ISO 2382/1 (1984)
 - Abstract program concept
 - general ideas and principles
 - grey area at a level of abstraction between algorithm and code
 - compilation, selection, structure of program commands as well as the fabric of algorithms, i.e., the way of their implementation and allocation to each other - "web"

BGH - „Betriebssystem“



Originality (Individuality) – before the Directive

- Test:
 - Creative latitude to carry out programming task
 - +
 - *First step*: comparison of the work with pre-existing creations to identify individual elements of the programme
 - *Second step*: these elements must **considerably exceed** the **average**, common creative work in programming/of the average programmer
- What s wrong with that?

Originality (Individuality) – after the Directive

- Art. 1(3) in combination with recital 8 of the Software Directive:
 - "No other criteria, esp. no qualitative or aesthetic, shall be applied to determine their copyrightability".
- On the other hand originality defined as "the author's own intellectual creation", reminiscent of civil law copyright concepts
- What are the consequences for copyright?

Originality (Individuality) – after the Directive

- Directive as a compromise solution
- -> dropping the second step ("Gestaltungshöhe")
- Standard of Individuality
 - exceeding the level of average programming
 - including a sufficient latitude for individual characteristics that are not trivial and dictated by the logic of the field of application

Specifying originality

- Expert system:
 - Above average from concrete task
 - Very complex task that cannot be solved by conventional techniques
 - Implementation of non-common programming techniques
 - Other programmer would take different path for same task
 - LG Oldenburg, CR 1996, 217

Specifying originality

- Austrian OGH 12.7.2005 – *TerraCAD*:
 - complex programmes, or
 - manifestation of unusual degree of experience, expertise and knowledge
 - length of programme, number of lines as indication
- German BGH 3.5.2005 – *Fash2000*:
 - „Kleine Münze“ is protected
 - Excluded are only simple routine programming services that any programmer would provide the same way
 - Presumption for the protection of (complex) programmes



Exclusive rights

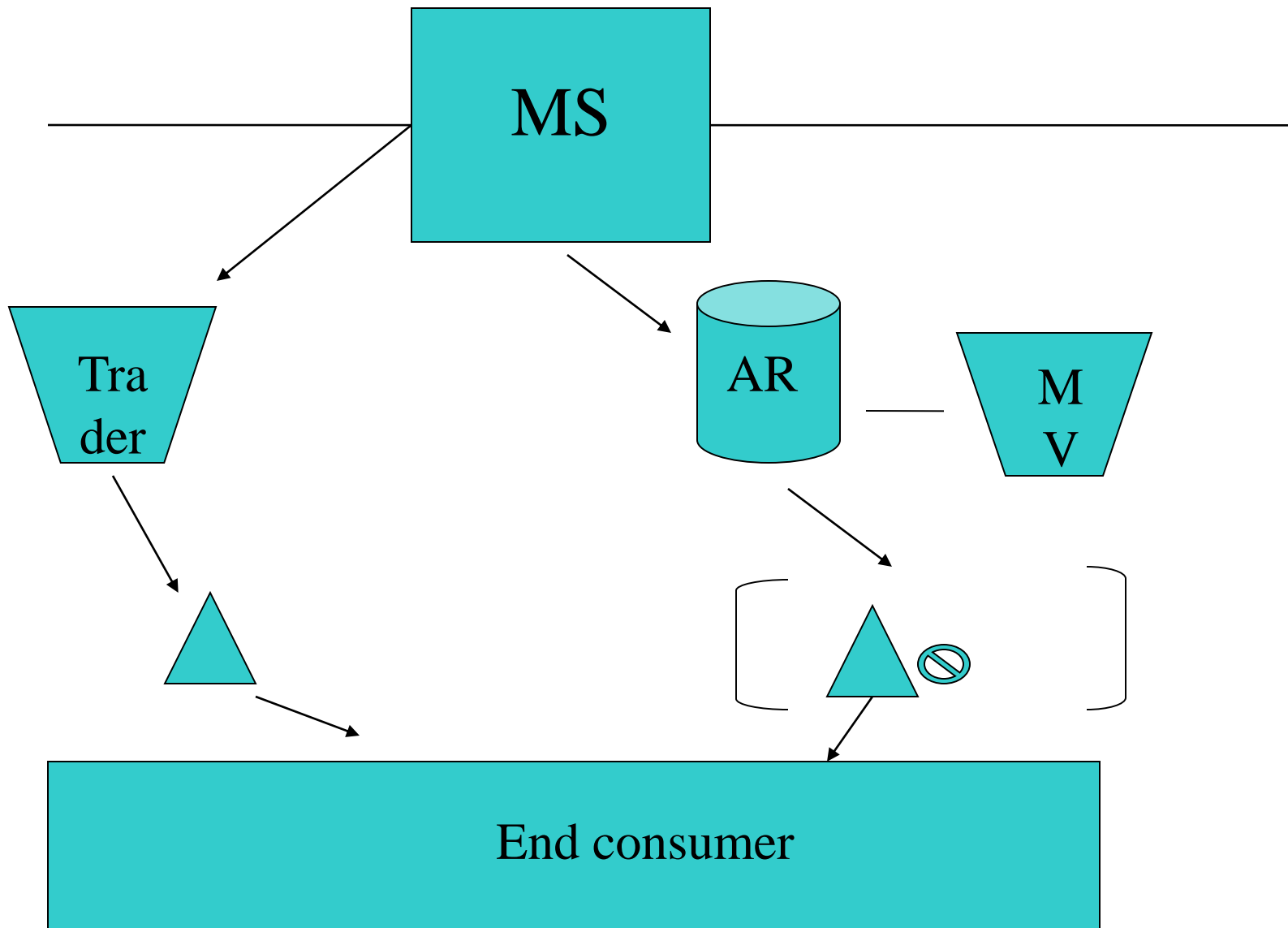
- Copying
 - In any medium, durable or non-durable
- Distribution
 - of physical copies
 - Principle of exhaustion, first-sale-doctrine
- Making available
 - Offering for download, interactive
- Modification
 - Between copying and free use

Principle of exhaustion – OEM case

Microsoft provides a „split distribution“ with respect to operating systems. Standard versions are being distributed to consumers. Other programme versions are only distributed in connection with a computer and may only be sold stored on a hardware by hardware vendors („Original Equipment Manufacturer“ „OEM“ version). These programme versions are distributed for 40% of the price of the standard versions.

The hardware vendors acquire the versions from „authorized replicators“ that produce copies from a master version provided by Microsoft. According to MS standard contract terms these copies may only be sold in conjunction with hardware. These limitations have to be reproduced in contracts in the chain of distribution. A respective notice has to be given on the package.

Hardware vendor X has the idea to sell OEM versions alone without a computer to a lesser price than MS. After MS found out it sued X for copyright violation and damages.



Exhaustion of distribution right

- Exhaustion principle
 - Public distribution by sale
 - With the consent of the rightholder
 - Within the EU
- Limited license
 - OEM
 - Is exhaustion limited to scope of license?
- BGH, CR 2000, 651
 - Exhaustion covers full distribution right
 - No protectable interest to price discriminate with the assistance of copyright

Further Issues of Software Directive

- Art. 5 - Limitations
 - Exclusion for acts necessary for the use of software according to the purpose of the contract
 - Circumvention of anti-copying devices permitted?
 - Use of third-party-services for maintenance and error correction?
- Art. 6 - Reverse engineering
 - for purposes of interoperability
 - Is it too complex?
- Art. 2(3)
 - Employee is copyright holder
 - Economic rights are deemed to be licensed to employer by law

Open Source Software

Definition

- Availability of source code
- Unrestricted distribution
- Unrestricted right of modification
- Fees only for copying costs and additional services

-> Is it contrary to copyright?

Licensing conditions GPL 2.0

- Copying and Distribution of Source Code 1
GPL
 - Attach Copyright Notice
 - Disclaimer of Warranty
 - Provide recipients with copy of license along with programme
- Modifications, copying and distributing 2
GPL
 - Notice stating change and date
 - Provide source code
 - Distribution under conditions of GPL
- Copying and distributing object format under conditions of 1-3 GPL

Is it enforceable ? D.Ct. Munich 2004

- First decision on Open Source License
- No waiver of copyright
- Valid contract conclusion upon download – offer to the public
- License may be granted by Copyright owners at any time
- Conditions of GPL are enforceable even if subjected

Combination with proprietary software – viral effect

- 2 I b GPL – „derived“ sections to be put under GPL
- 2 II – not under GPL: identifiable, not derived sections that can be reasonably considered independent and separate works in themselves
- For not derived sections GPL may apply if distributed „as part of a whole“ together with GPL program

Combination with proprietary software – viral effect

- Not sufficient:
 - Common storage and distribution carrier
 - Use of compilers, editors, and other tools
- Indication:
 - Software elements specifically designed for OSS and may only be run with it

Conflict with patent law

- No. 2 EUPL:
- “The Licensor grants to the Licensee royalty-free, non-exclusive usage rights to any patents held by the Licensor, to the extent necessary to make use of the rights granted on the Work under the License.”

Open RTLinux Patent License Version 2 -

www.fsmlabs.com/products/rtlinuxpro/rtlinux_patent.html - patent may be used for free if implemented with open source software

Other cases: publish as early as possible to avoid novelty of any patent claim



Resume

- Copyright not the appropriate scheme for protection for computer programs
 - not primarily literary expression
 - not communicated
 - but highly functional, utilitarian
- Efficiency considerations of programmes run against copyright criteria
- Copyright directly covers technical function, takes on patent-like protection without being tailored accordingly