Understanding intellectual property in academic software: scientific publications versus research software

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Plan

Motivation - why this study?

- CNRS research eng. at LIGM, software development experience
- lab's software mission (june 2006): increase software visibility
- study of lab's software, understanding (IP) problems
- joint PLUME (dec. 2008), publication lab's software:
  (3 + 33) http://www.projet-plume.org/LIGM
  (18) http://www.projet-plume.org/en/taxonomie/1936/en
- several PLUME docs: FAQ licenses, software lab's guide...
- PLUME theme manager: software assets of a laboratory

The 17 points of the study

Study framework: a (French) research laboratory.

Legal aspect's framework: *Code de la propriété intellectuelle* (France) (intellectual property rights).

Scientific publication versus **research software**		
definition	work (œuvre)	authors
right owners	signature	research lab's list of
dates	evolution	validation
quality and evaluation	prior works	motivation
diffusion	rights	licenses
reference	object	

Paper vs. software: **definition**

We speak here about a publication or software in a research laboratory: at least one author is a member of the lab.

Definition of academic software can be very large, it is restricted here to research software: software associated to a scientific paper.

	definition
Paper	- publication in a scientific revue - well known object
Software	- program associated to a published paper - not well defined object

Paper vs. software: **work (œuvre)**

[remainder] The legal framework:
Code de la propriété intellectuelle (CPI) in France.

	work (œuvre)
Paper	protected by the CPI
Software	what is protected by the CPI: - code (source, object) - preliminary work (documents,...) - interfaces - documentation (user,...)

The protection of preliminary work: also for papers, not important.

Paper vs. software: **authors**

Legal expert: the author writes the work.

	authors
Paper	- sign the paper - share the same % of authorship
Software	- determine authors can be a legal problem (*) - attribute a % of authorship - signed and dated document

(*) Reference:
IPR tracking methodology, deliverable A1.D2.1.4, Qualipso project.
http://www.projet-plume.org/fr/ressource/rapport-tracer-propriete-intellectuelle

Paper vs. software: **right owners**

[remainder] The legal framework:
Code de la propriété intellectuelle (CPI) in France.

The list of right owners derives from the list of authors.

	right owners
Paper	- authors - share the same % of ownership
Software	- exception CPI - usually employers i.e. head institutions: CNRS, Universities,... - authors if not status of employee - % of ownership results of % of authorship

Paper vs. software: **signature**

For example a PhD student in a lab with 3 head institutions, working at university 1, with a professor at university 2 and in collaboration with a CNRS researcher (3rd institution).

	signature
Paper	- list of authors - their affiliations: lab, institution, address - defined by head institutions - well known
Software	- copyright mentions right owners - can be difficult to determine - need to refer to signed agreements - not well defined - important to associate the lab (as in papers)

Paper vs. software: **research lab's list of**

	research lab's list of
Paper	- labs publish the list of references - used at lab's evaluation - up-to-date document
Software	- difficult to find whole list of lab's software - can be an internal list - some software on web sites - usually an unknown object

Paper vs. software: **dates**

	dates
Paper	- submission date - publication date
Software	- preliminary work's date - version's dates

For a paper, the date of preliminary work can be important, but usually avoided by early publications.

The evolution of a software can be caotic, from the legal point of view it is appreciated to have dates clearly stablished (APP, IDDN, others).

Paper vs. software: **evolution**

	evolution
Paper	- another paper - independent work
Software	- new version, independent work? - authors, right owners, %, dates, ... revisited

Paper vs. software: **validation**

	validation
Paper	- submission procedure - experts evaluation
Software	- validation procedure? - good testing can help - bugs are waiting

PLUME has its own concept of "validated software", related to (at least 3) well known institutional users.

How to assure reproductibility of research when the associated software is unknown?

Paper vs. software: **quality and evaluation**

[remainder] Study framework: a research laboratory.

	quality and evaluation
Paper	- can be done (for ex.) with citation index
Software	- can be done by the associated papers - capacity to attract users and contracts - software quality production methods can help - quality of software $\neq$ quality of research software

Paper vs. software: **prior works**

	prior works
Paper	- citation of previous papers - not a legal problem
Software	- inclusion of software components - license compatibility - license heritage - use of a component means license acceptance

Paper vs. software: **motivation**

	motivation
Paper	- research - enhance, spread knowledge - another publication
Software	- research - another publication - enhance, spread knowledge - rarely the software itself

Researchers and developpers need incentive, motivation and help (technical, legal aspects) to improve research software diffusion.

Does not help: there is no software validation procedure.

Paper vs. software: **diffusion**

	diffusion
Paper	- revue editors - web (own site, HAL, ArXiv, ...)
Software	- web - forge - need license

Paper vs. software: **rights**

[remainder] The legal framework:
Code de la propriété intellectuelle (CPI) in France.

	rights
Paper	- can read - can't copy
Software	- can read - can't use (without explicit given right) - can't modify, redistribute, ... (without explicit ...) - need license

Paper vs. software: **licenses**

	licenses
Paper	- Creative Commons (for example)
Software	- free/open source - proprietary - can release software under multiple licences

Free/Open Source Software requires a explicit Free/Open Source license: without a Free/Open Source license, a software is a proprietary software.

Law is local to a country. What is legal in one country can be against the law in another country, but where are the borders of the web?

Paper vs. software: **reference**

	reference
Paper	- HAL - http://hal.archives-ouvertes.fr/
Software	- PLUME - http://www.projet-plume.org/

HAL can produce the list of a lab's (or institution) publications.

PLUME produces:

- index cards to describe software
- pages to present lab's (or institution) software

Paper vs. software: **object**

[remainder] Study framework: a research laboratory.

	object
Paper	- scientific object - usually not used for technology transfer

Software	- 3D object (*)
	  - scientific
	  - transfer of technology
	  - industrial
	- two last dimensions are often unfamiliar, strange
	- two last dimensions are unavoidable

(*) Reference: INRIA F/OSS strategy (in french)
http://www.inria.fr/valorisation/Strategie-inria-logiciel-libre.pdf

Conclusion: understanding academic software (1)

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Academic software as an extension of research software (teaching, ...).

By comparing papers and software we try to understand problems related to academic software and how to tackle them.

Conclusion: understanding academic software (2)

- indispensable/necessary to take care of intellectual property aspects
- laboratories should improve software situation:
  enhance promotion, visibility, research evaluation
- how to help developers to distribute their software:
  PLUME, ENVOL, ...
- PLUME concept: validated software

References

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