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APPLICATION SERVICE PROVIDING,
COPYRIGHT, AND LICENSING

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I. INTRODUCTION

When people talk about software licensing or “buying” software, they usually think about buying a physical CD-ROM in a store or downloading the software from the Internet and then installing it on their computer. There is, however, a different business model that also grants users access to software: application service providing (“ASP”). Most people are already using software based on ASP in one form or another, e.g. in the form of a Web based e-mail service.¹

Although courts have decided cases regarding copyrighted works on the Internet, and there is some legal commentary on the issue, only a few concern ASP in relation to the licensing of copyright and software licensing. This article examines the legal consequences of ASP with respect to copyright in general and the copyright aspects of software licensing in particular.² It analyzes new issues that ASP raises regarding copyright that are not raised by “classic” software licensing and examines the copyright and related software licensing aspects connected to ASP. Is ASP a challenge for copyright and software licensing, or does it just raise old questions in a new context? Do copyright principles as developed for works other than computer programs lead to the same results when applied to ASP? To address these issues, I will first examine and define what ASP actually is and how it works. Then, in order to determine what licensing issues might arise in an ASP environment, I will analyze

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¹ The ASP-model has a much wider field of application than Web based e-mail. It could be used, for example, to host office software applications for a company.

² It is obvious that many legal issues arise in the context of ASP, e.g. warranty, liability and indemnification, data-hosting and –warehousing and, of course, of Service-Level-Agreements etc. See Jens Roerborn and Michael Sinhart, Application Service Providing – juristische Einordnung und Vertragsgestaltung [Application Service Providing – legal classification and form of contract], Computer and R. 2:69–77 '01. However, this paper concentrates on copyright and related licensing issues that ASP might raise.
what conduct and events occurring in connection with ASP are relevant regarding copyrights. Finally I will draw conclusions from the preceding analysis.

II. WHAT IS ASP AND HOW DOES IT WORK?

A. TYPICAL ELEMENTS OF ASP

In order to examine the ASP model from the point of view of copyright and software licensing, it is necessary to first determine what ASP actually is and, to a limited extent, how it works. Since ASP occurs in many different forms and there seems to be confusion regarding the term in the relevant literature, definitions of ASP vary widely.\(^3\) ASP can briefly be defined as follows: In an ASP-model the application service provider ("vendor")\(^4\) hosts software at a location it manages and enables its customers ("customer")\(^5\) to use the software by granting them access to it over a wide area network.\(^6\) Basically, ASP is running "software for another . . . in an interactive matter over a wide area network."\(^7\)

ASP has the following typical elements:\(^8\)

- The software is provided by the vendor. In many cases the software will be standard software. Where the software is developed for one specific customer using it over the network, the transaction would likely be referred to as "outsourcing."\(^9\)
- The rights to the software may be owned by the vendor, the customer, or a third party. For the purpose of this article, third-party ownership is the most interesting constellation because the issues ASP raises regarding copyright and licensing are best seen in such a situation. Thus, if not explicitly mentioned otherwise, I will assume in this article that the ASP-software is owned by a third party.
- The vendor is responsible for hosting the software on a server and possibly other IT-systems. Usually these are physically on premises that the vendor controls. However, this is not necessarily the case.

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4. In the following, the person offering the ASP will be referred to as "vendor."
5. In the following, the end user of the ASP-software will be referred to as "customer."
6. Falowski, supra note 4, at 10.
8. Malte Gruetzmacher, Application Service Providing Urhebervertragsrechtliche Aspekte [Application service providing – copyright licensing aspects], IT REchtsberater 3: 51 '01.
The vendor enables the customer to access the software over a network, usually against payment of a fee. The network used may be the Internet, a dedicated line, virtual private network, wireless, etc.\textsuperscript{10} 

The customer accesses and uses the software over the network.

The software application itself is not installed on the customer's computer. As previously mentioned, the customer uses it over a network.

Moreover, the vendor may accept many other duties, such as updating, maintenance, data hosting, data storing, support and customizing. The vendor usually manages, maintains, and monitors the application and some or all of the computing-, storage- and network-infrastructure needed by the customer to access and use the software application.\textsuperscript{11}

The vendor will usually offer the software for use by many customers (one-to-many model), rather than to a single customer (one-to-one-model).\textsuperscript{12}

The use of software over an ASP may be described as similar to “on demand” music and movie services because it enables the vendor to calculate payment on a “per use” basis.

\textbf{B. REMARKS FROM A TECHNOLOGICAL PERSPECTIVE}

From a technological perspective, ASP works in either one of the following two ways:

- By using a server-client tool: In these cases the software application itself remains completely on the vendor's server. Only the user interface is transmitted to the customer's computer. In these cases, it is necessary to install certain software on the customer's computer that enables her to use the server-client tool.

- By using Internet browsers and HTML, JAVA and/or other similar software formats: As in the case of using a server-client tool, the software itself is not completely transmitted to the customer's computer, but usually only the user interface is transferred.\textsuperscript{13} However, it is possible for small computer programs, e.g. JAVA-applets, to be transmitted online to the customer's computer, where they are executed.

\textsuperscript{10} Id. at 405.

\textsuperscript{11} See Falowski, supra note 4, at 10; Torsten Bettinger and Michael Scheffelt, Application Service Providing: Vertragsgestaltung und Konflikt-Management [Application Service Providing: Form of contracts and conflict management], Computer and R. 11:729 '01.; Roerborn and Sinhart, supra note 3, at 70.

\textsuperscript{12} See Bettinger and Scheffelt, supra note 12, at 729.

\textsuperscript{13} See Gruetzmacher, supra note 9, at 82.
ASP does not, however, involve downloading of the complete software from the vendor's server to the customer's computer.\textsuperscript{14}

C. \textbf{ASP, Software as a Service (SaaS), and Outsourcing}

In the context of ASP, two other terms are often mentioned: SaaS and Information Technology (IT)-outsourcing. To avoid confusion, some remarks regarding differences and similarities between these terms and ASP are required.

As explained above, vendors of ASP provide software services. However, it seems that due to "the premature rise and very loud fall of the industry's largest ASPs"\textsuperscript{15} the term "ASP" has a slightly negative connotation from the vendor's perspective. Therefore, although having a similar meaning, the term SaaS is often used instead of ASP today.\textsuperscript{16}

IT-outsourcing is the outsourcing of IT-infrastructure, -processes, personnel, -applications or even a whole IT-department to an external provider. Therefore, ASP is one form of outsourcing, among many. Its core being the outsourcing of certain IT-applications to an external provider and the use of these applications over a wide area network.

The term IT-outsourcing is obviously much broader than ASP, it might also include outsourcing hardware or even personnel, and there are the following differences:

- Even though the customer may use software over a network in both cases, classically, the term outsourcing is used for a one-to-one model where the vendor develops the software solution based on the individual requirements of the customer. In contrast, a vendor in an ASP-model generally uses a one-to-many approach and offers services to a large number of customers.
- Moreover, where software of third parties is involved, in the outsourcing business model the customer will license the software and then sub-license it to the vendor. In an ASP-model, the vendor licenses the software and sub-licenses it (as far as sub-licensing is necessary) to the customer.\textsuperscript{17}

D. \textbf{Parties Involved and Economist Background}

There are a large number of parties potentially involved in an ASP transaction besides the vendor and the customer. These parties include the software developers, independent software vendors, network service providers, and more.

\begin{itemize}
\item \textsuperscript{14} When a software application is downloaded, a copy of it is made and eventually installed on the computer of the user.
\item \textsuperscript{15} See Frank Bocchino, \textit{Making Sense of Software as a Service}, \textit{Upgrade} 8 (May 2002).
\item \textsuperscript{16} See Stephan Peter, \textit{Verfuegbarkeitsvereinbarungen beim ASP-Vertrag} [Availability agreements in ASP-contracts], Computer and R. 6:404, '05.
\item \textsuperscript{17} See von Westerholt and Berger, supra note 10, at 82.
\end{itemize}
providers, the application infrastructure provider, back office providers, and systems integrators. However, this article will not discuss issues that arise from involvement of parties other than the vendor, the customer and the third party owner of the rights to the software, since stakeholders other than software owner, vendor, and customer are of less interest in the present context.

From an economical point of view, ASP may have advantages for the customer, such as (1) avoidance of initial investment (the customer does not have to make a one time payment to license the software, but usually pays “per use”), (2) less investment needed in hardware (because the vendor hosts the software on its server and the customer only needs a workstation with access to the relevant network), (3) less risk of the software becoming outdated (if the vendor does not update the software on a regular basis he will not receive fees from his customers because they will change to another vendor), (4) possibility to try other vendors’ products and services (at least where the payment is made “per use”), and (5) the customer will not be bound to the vendor financially. Although the customer may be bound to the software and where the vendor houses the customer’s data, to the vendor (from a technical perspective).

The initial costs of the vendor may be rather high because the vendor will have to build up an infrastructure (hardware and software) and there will be costs for maintaining and updating the system. The vendor will, however, benefit from ASP because it distributes its costs over many users and the model opens a new possibility to exploit the software. Moreover, ASP permits the vendor to sell many other services connected to it (e.g. support, data hosting, data warehousing etc.) and, thus, distinguish herself more from competitors than if she sold the same software as her competitors.

III. ASP-CONDUCT RELEVANT FOR COPYRIGHT

A. PRELIMINARY REMARK

Based on the previous explanations of the ASP-model, this article will now examine, in Section III, Part C to Part H, in detail the various steps of using a software application in an ASP-model and how the relevant concepts and provisions of copyright apply to them. This discussion will help to analyze, in Section IV, what copyright-licensing issues are

18. See Bettinger and Scheffelt, supra note 12, at 730.
20. Id.
21. See Roerborn and Sinhart, supra note 3, at 70.
22. See Berger, supra note 20, at 668.
raised by ASP. First, to better understand the implications of the application of copyright to software in an ASP-model, some discussion is required regarding certain copyright principles as applied to software.

B. Is Used Software Protected by Copyright?

The first question to ask when examining the copyright implications of ASP is whether the software used by a vendor is protected by copyright at all. According to Title 17, Section 102, copyright “protection subsists in original works of authorship, fixed in a tangible medium of expression . . . from which they can be perceived, reproduced or otherwise communicated . . . ” Works of authorship include literary works as well as pictorial and graphic works.

In 1979, the National Commission on New Technology Uses of copyrighted works (“CONTU”), which was the basis for the Computer Software Protection Act of 1980, recommended that software programs (as far as they embody an author’s original creation) be proper subject matter of copyright. As far as copyright is concerned, computer programs have been treated as literary works ever since. Copyright in general protects object and source code as literary works.

As already explained, ASP involves the transfer of user interfaces and screen displays from the vendor’s server to the customer’s computer over the Internet. Are such user interfaces or screen displays protected

23. Copyright and licensing are only a small part of the issues that arise in connection with ASP. ASP has many other implications and contracts in connection with it likely contain more clauses connected to other problems, e.g. other services, liability, service level etc., than provisions regarding licenses. This paper does not cover those other issues and concentrates solely on copyright and licensing.


26. Object code is the code as it is read by the machine, in zeroes and ones (and can usually be understood only by machines).

27. Source code is the code written in programming languages (e.g., HTML, Java etc.) that is readable by humans.

28. See e.g. Apple Computer, Inc. v. Franklin Computer Corp., 714 F.2d 1240, 1249 (3d Cir. 1983) (copyright can exist in computer programs expressed in object code or embedded on a ROM); Data Gen. Corp. v. Grumman Sys. Support Corp., 834 F.Supp. 477, 484 (D. Mass. 1992) (computer programs were protected by the Copyright Act); See Fonar Corp. v. Domenick, 105 F.3d 99 (2d Cir. 1997) (prima facie validity attached to the certificate of copyright registration for a software for magnetic resonance imaging); SecureInfo Corp. v. Telos Corp., 387 F.Supp.2d 593, 612 (E.D. Va. 2005) (literal elements of computer programs, such as source and object codes, are entitled to copyright protection).
by copyright? It is generally accepted that non-literal parts of software (e.g. structure, sequence or organization, but also user interfaces and screen displays) are copyright-protected under certain circumstances. User interfaces are similar to visual creations and, therefore, are protectable by copyright also in this quality.

According to the general limitation of copyright (protection of expressions, not of ideas), the copyright-protection of non-literal parts of software is limited to cases involving expression rather than idea or function. Ideas and functions must remain in the public domain. Thus, the court in Apple Computer, Inc. v. Microsoft Corp., 35 F.3d 1435 (9th Cir. 1994), held that there was no copyright protection for using windows to show multiple images on the screen, using familiar office equipment as icons to operate computer, using menus for opening and closing files etc.

Moreover, where the elements of a screen display for software are chosen from very few possible alternatives and are, in addition, limited by other constraints, those elements of the screen display are not protected by copyright.

To decide whether non-literal parts of software are subject to copyright protection or are excluded by the limitation just mentioned, courts apply the so called "abstraction-filtration-comparison analysis." In this analysis the computer program’s structure is dissected into its various levels of abstraction and its unprotectable aspects are filtered out. To decide whether the remaining aspects are infringed, these aspects are


30. See e.g. General Universal Sys., Inc. v. Lee, 379 F.3d 131, 142 (5th Cir. 2004); Johnson Controls, Inc. v. Phoenix Control Sys., Inc., 886 F.2d 1173, 1175 (9th Cir. 1989); See Dun & Bradstreet Software Services, Inc. v. Grace Consulting, Inc., 307 F.3d 197, 215 (3d Cir. 2002); SecureInfo Corp. v. Telos Corp., 387 F.Supp.2d 593, 612 (E.D. Va. 2005) (copyright protection can extend to the nonliteral elements of a work. Non-literal elements of a computer program may receive copyright protection even if they are not individually protectable, if they are compiled in a unique or creative way.).

31. See David Baumer et al., Cyberlaw & E-Commerce 307 (2002).

32. See e.g. Johnson Controls, Inc. v. Phoenix Control Systems, Inc., 886 F.2d 1173, 1175 (9th Cir. 1989); O.P. Solutions, Inc. v. Intellectual Prop. Network, Ltd., 50 USPQ.2d (BNA) 1399, 22-23 (S.D. N.Y. 1999); See Apple Computer, Inc. v. Microsoft Corp., 35 F.3d 1435 (9th Cir. 1994) (no copyright protection for using windows in order to show multiple images on the screen, using familiar office equipment as icons to operate computer, using menus for opening and closing files etc.).

then compared to the possibly infringing software.\textsuperscript{34}

Before deciding whether any exclusive rights in software are affected in a specific ASP case, the first step is to analyze the specific case according to the rules mentioned above. In the analysis, it is necessary to determine which elements of the specific software are protected by copyright. In particular, user interfaces or screen displays transmitted from the vendor's server to the customer's computer may not be protected by copyright in certain cases.

C. EXCLUSIVE RIGHTS IN COPYRIGHTED SOFTWARE

To decide whether any rights of the copyright owner are affected by the use of a certain software in an ASP-model, it has to be remembered that according to Title 17, Section 106, the copyright owner has the exclusive right to do and authorize the following:

- Reproduce the copyrighted work;
- Prepare derivative works based on the copyrighted work;
- Distribute copies of the copyrighted work to the public;
- In the case of literary works, perform the copyrighted work publicly;
- In the case of literary, pictorial and graphical works, display the copyrighted work publicly.

It has to be examined whether any of those rights are affected by any actions connected with an ASP-model.

D. INSTALLING THE SOFTWARE ON THE VENDOR'S SERVERS

In a first step, the vendor will likely install the software that he has received (by a third party) either in the form of a CD-ROM or by transmission over a network (e.g., download) on her server. The installation on the server of the vendor constitutes a reproduction\textsuperscript{35} for the following reasons: Reproducing as used in copyright means "to produce a material object in which the work is duplicated, transcribed, imitated, or simulated in a fixed form from which it can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device."\textsuperscript{36} When the software is installed on the vendor's server, the relevant code (the copyrighted work) is fixed on the hard drive of the server.

\textsuperscript{34} See \textit{e.g.}, Computer Mgmt. Assistance Co. v. Robert F. DeCastro, Inc., 220 F.3d 396, 401 (5th Cir. 2000); Bateman v. Mnemonics, Inc., 79 F.3d 1532, 1544 (11th Cir. 1996); Engineering Dynamics v. Structural Software, 26 F.3d 1335 (5th Cir. 1994); Gates Rubber Co. v. Bando Chemical Industries, Ltd., 9 F.3d 823, 833 (10th Cir. 1993); Computer Associates Int'l, Inc. v. Altai, Inc., 982 F.2d 693, 706 (2nd Cir. 1992); Cisco Sys., Inc. v. Huawei Technologies, Co., Ltd., 266 F. Supp. 2d 551, 554 (E.D. Tex. 2003).

\textsuperscript{35} See Vault Corp. v. Quaid Software Ltd., 847 F2d 255, at 259 (5th Cir. 1988) (copying software into computers memory is reproduction, but was, in this case, permitted by 17 U.S.C.S. §117(1) (2007).

(duplicated on a material object in a fixed form) and from the hard drive it can be "perceived, reproduced or otherwise communicated."

The reproduction on the vendor's server is generally covered by the license agreement between the third party, and the vendor. As compared to regular software licensing, this does not raise any special issues in the ASP context.\footnote{If using the software for ASP is not licensed, however, already the installation on the server may infringe copyright, e.g., in cases where using the software for ASP is a breach of the license and the license is revoked (and treated as if it never existed) by the licensor.} Even if, in a given case, it is not covered by the license agreement, the vendor will usually be entitled to make the copy to her server under Title 17, Section 117(a). This provision permits the owner of a copy of a computer program to make another copy of it provided that "such a new copy is created as an essential step in the utilization of the computer program in conjunction with a machine and that it is used in no other manner."\footnote{17 U.S.C.S. §117(a)(1) (2006).} In the case of a vendor installing the software on its server, the new copy is essential for the utilization of the software on the server and therefore covered by Title 17, Section 117(a).\footnote{For details regarding 17 U.S.C.S. §117 (2006) and its legislative history, see Vault Corp., 847 F2d at 259 (copying computer program into computers memory was permitted under the circumstances, according to 17 U.S.C.S. §117 (2006).}

\section*{E. Customization by the Vendor}

There may be cases where the vendor customizes the software of a third-party copyright owner for the customer. This conduct might affect the exclusive right to prepare a derivative work. Even though customization is not directly connected to the use of the software by the customer in the ASP-model, but rather seems to be an additional "service" of the vendor, it is sufficiently connected to the licensing issues to merit a short discussion.

According to Title 17, Section 101, a derivative work is "a work based upon one or more preexisting works, such as . . . or any other form in which a work may be recast, transformed or adapted. A work consisting of . . . other modifications which, as a whole, represent an original work of authorship is a 'derivative work'."

Two cases have to be distinguished: In the first, the software itself permits and enables the customization the vendor makes, e.g., in an 'Options' menu. In these cases, the customization is only a use of the existing software, as it was meant to be used by its author. There is no "new work." Therefore, the exclusive right of the copyright owner to prepare derivative works is not infringed.
In a second scenario, the vendor actually changes the code of the software in some way, either by modifying the software or combining it with other computer programs. In these cases, the vendor will likely prepare a derivative work, which effects the exclusive right of the copyright owner, unless the modification is permitted under Title 17, Section 117. Where such conduct is covered by the license granted to the vendor there would be no copyright-violation.

F. Use of Software by the Customer

1. Preliminary Remark

When analyzing the use of the software by the customer, one must distinguish between (1) the software located on the vendor's server that the customer accesses and (2) the computer program installed and run on the customer's own computer used to access the server and the software located there. Regarding the latter, there are no ASP-specific issues. The installation on the customer's computer is clearly a reproduction. In each case, it must be determined whether the customer is permitted to use the program based on the general principles of copyright. However, a more in depth analysis is required when a customer accesses software located on the vendor's server.

2. RAM Copies

When a computer program is running, it is loaded into the Random Access Memory ("RAM") of the computer; the RAM-copy of the software is erased when power is turned off. Since the process of using software in an ASP-model necessitates the making of RAM-copies of the software, at least on the vendor's server, it is necessary to briefly remark on the qualification of such copies in copyright law.

Courts have held that loading a computer program from a permanent storage medium, such as the computer's hard drive, to the RAM when the software is booted up constitutes a reproduction of the work. This is because a duplication of the software is made in the RAM which is sufficiently "fixed" and can be "perceived, reproduced, or otherwise communicated."42

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40. Concerning this distinction see also Gruetzmacher, supra note 8, at 60; von Westerholt and Berger, supra note 9, at 82.
41. See Krause v. Titleserv, Inc., 402 F.3d 119 (2d Cir. 2005) (Whether a programmer can argue that customers could use the code he wrote for them, but not modify the source code. The court found that changes to the program under the circumstances were permitted under 17 USC §117).
42. MAI Sys. Corp. v. Peak Computer, Inc., 991 F.2d 511, 519 (9th Cir. 1993) (finding that a reproduction occurred when defendant ran plaintiff's program that had been licensed to defendant's customers on the customers computers and loaded it into RAM); Advanced Computer Servs. v. MAI Sys. Corp., 845 F.Supp. 356 (E.D. Va. 1994) (finding
One could argue that a copy in the RAM of a computer is not sufficiently “fixed” to qualify as a copy. But, RAM is not necessarily transitory and the Copyright Act does not require absolute permanence for the creation of a copy, but only that the copy is sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration. In the case of a RAM copy, one Virginia court held,

"Once a software program is loaded into a computer’s RAM, useful representations of the program’s information or intelligence can be displayed on a video screen or printed out on a printer. And this can be done virtually instantaneously once loading is completed. Given this, it is apparent that a software program residing in RAM is “stable enough to be perceived, reproduced, or otherwise communicated” for a period of more than transitory duration."

The view that RAM copies are reproductions for purposes of copyright has been challenged on the basis that copyright owners receive too much control over the use of their works if RAM storage is treated as “reproduction.” Moreover, treating all RAM-copies as reproductions has a vast influence on how transmissions over computer networks are viewed from a copyright perspective because such transmissions usually involve many RAM-copies. Nevertheless, as already mentioned, many courts have held that RAM-copies are reproductions.

However, Title 17, Section 117(a) permits the owner of a copy of a computer program to make or authorize the making of another copy of it provided that “such a new copy is created as an essential step in the utilization of the computer program in conjunction with a machine and that it is used in no other manner.” This provision also applies to RAM

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45. MAI Systems Corp., 991 F.2d at 511-519; Triad Sys. Corp., 64 F.3d 1330; Stenograph L.L.C. v. Bossard Assocs., 144 F3d 96, at 101-102 (D.C. Cir. 1998) (stating that “the loading of software from some permanent storage medium, such as a floppy disk or a computer’s hard drive, to the computer’s random access memory (‘RAM’) when the software is ‘booted up’ causes a copy to be made”) see also Information Infrastructure Taskforce, Intellectual Property and the National Information Infrastructure, The Report of the Working Group on Intellectual Property Rights 65, http://www.uspto.gov/web/offices/com/doc/ipnii/ipnii.pdf (Sept. 1995).
The court in *MAI Systems Corp. v. Peak Computer, Inc.* did not apply Title 17, Section 117(a) to the RAM copies in question in that case on the grounds that plaintiff "licensed its software, [and the defendant's customers] do not qualify as 'owners' of the software and are not eligible for protection under Section 117." The conclusion of the court is flawed because Title 17, Section 117(a) does not reference the "owner of the copyrighted software" but grants permission to "the owner of a copy of a computer program." In order to decide whether a copy has been lawfully made under Title 17, Section 117(a) a court should examine whether the copy was made or authorized by the owner of a copy of the software. Thus, when deciding whether Title 17, Section 117(a) applies it is relevant whether the "licensee" (rightfully) owns a copy of the software. If he does, the "ownership" requirement of Title 17, Section 117 is fulfilled. The court in the MAI-case should therefore have found the reproduction of the software in the RAM was justified under Title 17, Section 117(a) and did not automatically infringe plaintiff's copyright.

How do these general principles regarding RAM-copies apply in the ASP context? As explained, the ASP-software is not installed on the customer's computer and thus, no reproduction of the complete software is made to the hard drive of the customer's computer. But are there RAM-copies of (copyrighted) parts of the software made on the customer's computer? That depends on the technology used.

If the ASP is based on server-client technology, the customer loads only a user interface into her computer's RAM. As far as the user interface is itself protected by copyright (and in certain cases it may well be), loading the user interface into RAM is itself a reproduction of a copyrighted work. But in cases where the user interface is not protected, no reproduction relevant to copyright takes place on the customer's computer at all, because the running of the program takes place exclusively on the vendor's server, and no copies of protected subject matter are made in the customer's computer's RAM.

The situation may be different if browser technology is used in the implementation of an ASP-model. In these cases small computer programs, e.g., JAVA-applets, are often transmitted online to the customer's

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47. *MAI Sys. Corp.*, 991 F.2d at 511.

48. *Id.* at 519; *see also*, Advanced Computer Servs., 845 F.Supp. at 367


computer, where they are executed.\textsuperscript{52} Therefore, RAM copies of these small parts of software are made on the customer's computer. As far as they are protected by copyright themselves, the software owner's reproduction right is affected.

Consequently, it is possible that reproductions of a copyrighted work are made on the customer's computer in an ASP context. However, as discussed above, this is not necessarily the case. There may well be scenarios where no reproduction of the ASP-software relevant under copyright takes place on the end user's (i.e. the customer's) computer.\textsuperscript{53} This highlights a major difference between ASP and "classic" software licensing in which the relevant reproduction usually takes place by installing and running (i.e. making RAM copies of) the software on the end user's computer.

Even if there is no reproduction of the protected software or parts of it on the customer's computer, in order to enable the customer to use the software, it must be loaded into the RAM of the vendor's server. Whether this RAM copy is initiated by the vendor or the customer depends on the facts of the specific case.

The first and probably most common case is when the vendor loads software into the RAM of its server and holds it ready for the customer to access and use.\textsuperscript{54} Therefore, the customer does not cause the reproduction in the RAM. Loading the software into RAM will generally be covered by the license the vendor received from the owner of the rights to the software, as in the case of installing the software on the server.\textsuperscript{55}

In the second case the customer, by some kind of input over the network, causes the RAM copy to be made. This second scenario has certain similarities to the MAI-case discussed above.\textsuperscript{56} In MAI the defendant loaded the plaintiff's software into the RAM of a third party's computer. Even though the third party was a licensee of the plaintiff, the court stated that "MAI [plaintiff] software licenses do not allow for the use or copying of MAI software by third parties such as Peak [defendant]" and held that defendant had infringed plaintiff's copyrights. Based on such reasoning, a court could conclude a customer causing ASP-software to load into the vendor’s servers RAM, e.g., by input over a network, makes a reproduction of the work and, under certain circumstances, infringes the software owner’s copyright. Whether there was an infringement would, of course, also depend on the wording of the license to the vendor.

\begin{footnotes}
\item[52] Gruetzmacher, \textit{supra} note 8, at 60.
\item[53] Id.
\item[54] Bettinger and Scheffelt, \textit{supra} note 11, at 734; Gruetzmacher, \textit{supra} note 8, at 60.
\item[55] If using the software for ASP is not licensed, loading it into the server's RAM may infringe copyright, especially in cases where using the software for ASP is a breach of the license and the license is revoked (and treated as if it never existed) by the licensor.
\item[56] \textit{See MAI Sys. Corp}, 991 F.2d 511.
\end{footnotes}
(E.g. where the license to the vendor is limited to uses to fulfill vendor’s own internal information processing needs, copying into RAM by the customer would be an infringement.) Moreover, it is possible to argue that Title 17, Section 117(a) applies.

Consequently, the following situations involving RAM-copies in connection with ASP are most common:

- customer loading copyright protected user interface into RAM of her computer;
- customer loading small parts of computer code (e.g., JAVA-applets) into RAM of her computer;
- vendor loading software into RAM of her server (although this step is usually not problematic);
- customer loading software into RAM of vendor’s server.

In all these cases the question arises whether the conduct described is covered by Title 17, Section 117(a). As seen above, Title 17, Section 117(a) permits “the owner of a copy of a computer program to make or authorize the making of another copy or adaptation of that computer program provided . . . that such a new copy is created as an essential step in the utilization of the computer program in conjunction with a machine and that it is used in no other manner.”

Assuming that the vendor in a given case is the (rightful) owner of a copy of the software (e.g., that he has received a CD-ROM with the software on it or downloaded it from the Internet to his hard drive), and that where the RAM copies are made by the customer the vendor has “authorized the making” of these copies, one could argue that all RAM copies mentioned above are “created as an essential step in the utilization of the computer program in conjunction with a machine” and, thus, permitted under Title 17, Section 117(a). In making this argument, reference could be made to *Vault Corp. v. Quaid Software Ltd.* where the court sets forth that Title 17, Section 117(a) applies even if the copy is not made “for the purpose of using it for its intended purpose”. Also, since the exemption grants the privilege to authorize third parties to make such a copy, one court rejected a claim involving independent service organizations running software on behalf of their clients. However, in the cases where copies are made by the customer, the decision in *MAI Systems Corp. v. Peak Computer, Inc.* even though it is arguably flawed, must be considered.

Additionally, although Title 17, Section 117(a) permits the making of another copy of the software, ASP usually (where the model is one-to-

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57. *See Vault Corp.*, 847 F.2d at 259-261.
many) requires the customer to create multiple copies of the software and therefore this situation exceeds the scope of the exception.

Moreover, the limitation of Title 17, Section 117(a) is intended to apply only to the owner-user of a computer who owns a copy of the software and who makes the privileged reproduction for use on his own computer for his own internal use.\textsuperscript{60} Also, the CONTU Report, on which the legislator based the provision and which is regarded as an expression of legislative intent,\textsuperscript{61} stated the purpose of the provision as follows:

one who rightfully possesses a copy of a program \ldots should be provided with a legal right to copy it to that extent which will permit its use by the possessor,\textsuperscript{62} and the proposed Section 117(1) was drafted to "provide that person in rightful possession of copies of programs be able to use them freely without fear of exposure to copyright liability.\textsuperscript{62}

Since in the case of an ASP model in which the RAM copies mentioned are not made for the "use by the possessor,"\textsuperscript{63} the making of these RAM copies is not covered by Title 17, Section 117(a) as interpreted based on the legislative intent. Under these circumstances, relying on Title 17, Section 117(a) to justify the RAM reproductions made in connection with an ASP-model is rather unconvincing.

Therefore, the following is a major difference between ASP and "classic" software licensing: in "classic" software licensing the licensee uses the licensed software on its computer for itself. In ASP, RAM copies may be made on a computer other than the vendor's (the licensee) or may be initiated (even if on the vendor's computer) by and for another person than the vendor. The consequences of these facts regarding reproduction of the work and the application of Title 17, Section 117(a) are also different from the issues that arise under "normal" software licensing.

3. \textit{Is "Using the Software" Prohibited by An "Exclusive Right"?}

It is possible that in an ASP-model no reproduction other than installation and loading into RAM (initiated by the vendor) on the vendor's server takes place. Therefore one must consider whether simply using the software (i.e. having it run, once it has been loaded into RAM) infringes copyright?

The exclusive rights granted to the copyright owner under Title 17, Section 106 are broad. Even so, the copyright owner does not have the exclusive right to \textit{use} her work. The Supreme Court stated that copyright

\begin{itemize}
\item \textsuperscript{60} 2-8 Nimmer on Copyright §8.08; Apple Computer, Inc. v. Formula Int'l, Inc., 594 F.Supp. 617 (C.D. Cal. 1984).
\item \textsuperscript{61} See Vault Corp., 847 F2d at 259-261.
\item \textsuperscript{63} Congress has changed the term "possessor" in the Copyright Act to "owner" of a copy.
\end{itemize}
Copyright is limited in that not all possible exploitation of a copyrighted work is necessarily an infringement of copyright.

Therefore, where there is no reproduction of the software involved and no other exclusive right under Title 17, Section 106 is infringed, simply using the software itself does not constitute sufficient grounds for an infringement claim. So the fact that a customer uses software located on a vendor's server does not in itself constitute a violation of copyright. Whether it is a breach of the license agreement in a specific case is a different question.

Although the concept that not every use of a work is covered by copyright also applies in a situation of "classic" software licensing, it has more importance and its implications become much clearer in the ASP-context.

G. DISTRIBUTION

Do any of the steps an ASP-model involves give rise to an argument that the vendor is engaged in distributing software? According to Title 17, Section 106(3), the owner of the copyright has the exclusive right to sell, give away, rent, lease, or lend any material embodiment of his work to the public.

The first step to answering this question involves determining whether the requirement of "public" is met in the ASP-context. It must be kept in mind, that Title 17, Section 106(3) is basically a right to control publication of the work and that a limited publication made to "a limited group for a limited purpose and not to the public at large" should not qualify as infringing on the distribution right. In ASP "one-to-many"-models the vendor will potentially provide the service to any interested customer. The potential publication would subsequently not be for a limited group for a limited purpose. Therefore, the requirement that a possible distribution be public will not pose a problem in the classic "one-to-many" ASP cases.

The second step to determining whether there is a distribution of software requires analysis of whether any of the conduct involved in ASP qualifies as "distribution". As was previously mentioned, the author has the exclusive right to distribute to the public or authorize distribution of copies of the work. Distribution means to sell or otherwise transfer own-

64. See Sony Corp. v. Universal City Studios, Inc., 464 U.S. 417, 432 (1984) (the case denies secondary liability for manufacturing and selling video tape recorders); 2-8 Nimmer on Copyright § 8.01 who also states that "the suggestion in certain cases that use alone constitutes an infringement is in error."

65. 2-8 Nimmer on Copyright § 8.11.
ership by giving away, renting, leasing, or lending a copy (i.e. material objects in which a work is fixed and from which the work can be perceived, reproduced or otherwise communicated). When the Supreme Court explained the scope of the distribution right, it referred to the legislative history which observed that the distribution right establishes the exclusive right of publication and that the copyright owner has the right to control the first public distribution of an authorized copy of the work.

According to the definition of “publication” in Title 17, Section 101, a “publication” is “the distribution of copies or phonorecords of a work to the public by sale or other transfer of ownership, or by rental, lease, or lending. The offering to distribute copies or phonorecords to a group of persons for purposes of further distribution, public performance, or public display, constitutes publication.” The first of the two definitions requires the actual transfer of a copy of the copyrighted work. “[D]issemination of the work, in which a material object does not change hands . . . is not a publication, no matter how many people are exposed to the work.” A number of courts have, therefore, held that “infringement of the distribution right requires an actual dissemination of . . . copies” and “requires the transfer of an identifiable copy of that work.”

Even if the term ‘transfer of a copy’ were interpreted very broadly, the transaction between the vendor and the customer can not be qualified as distribution where no copyrighted work is transmitted. Therefore, in the context of ASP, distribution is not an issue as far as the copyrighted work is not transmitted from the vendor's server to the customer's computer, because the customer does not (and is not intended to) end up with a copy of the work. This is also a difference to classic software licensing where a copy of the work is transferred from the vendor to the customer which affects the distribution right.

However, what about ASP cases where a copyrighted part of the work is transmitted over the network from the vendor’s server to the customer’s computer (e.g., JAVA-applets) and a copy of this copyrighted work is made (at least in the RAM) of the computer of the customer? To solve that issue, the following has to be considered:

One could rely on the legislative history and argue that no material

object changes hands, and therefore, no distribution takes place.\textsuperscript{70} There has been case law supporting this assumption, such as \textit{National Car Rental Sys. Inc., v. Computer Assocs. Int'l. Inc.}, in which a licensor licensed computer software to the licensee to be used only to process the licensee's data. When the licensee used the programs to process data of third parties, the licensor sued. The court set forth that the licensee never actually distributed a copy of the software to third parties.\textsuperscript{71} Whether the licensee breached a right not existing under copyright law, which was created by the license agreement, is a different question.

Moreover, in connection with the unauthorized satellite transmission of a copyrighted sound recording, the Second Circuit held that such transmission did not violate the distribution right. According to the court, the contrary result would grant the owners of copyrighted sound recordings performance rights the statute expressly denies them, except for digital audio transmissions.\textsuperscript{72} Moreover, according to Title 17, Section 101 "a public performance or display of a work does not of itself constitute publication."

However, the case of ASP where a copy of a copyrighted part of the software ends up on the computer of the customer (user interface, JAVA-applets) can be distinguished from the two cases just mentioned above where no copy of a copyrighted work ends up with the person to whom it was allegedly distributed. This is because, in connection with transmissions of copyrighted works over computer networks, in particular the posting on and transmission over the World Wide Web, some courts have held that transmissions of works over the Internet do, in fact, constitute a distribution of the work.

In \textit{Playboy Enterprises, Inc. v. Frena} the defendant operated a subscription bulletin board service ("BBS").\textsuperscript{73} Using the Internet, subscribers could upload material onto the BBS and other subscribers could then view the material, download, and store that material on their computer.\textsuperscript{74} On the BBS many photographs were available in which plaintiff owned the copyright. Frena argued he did not upload the photographs himself, but that they had been uploaded by subscribers, and he was therefore, not liable.\textsuperscript{75} The court held that the defendant had distributed these pictures:

Public distribution is a right reserved to the copyright owner, and usurpation of that right constitutes infringement. . . . PEI's right under Title

\textsuperscript{72} Agee v. Paramount Commc'ns, 59 F.3d 317, 324-325 (2d Cir. 1995).
\textsuperscript{73} 839 F.Supp. 1552 (M.D. Fla. 1993).
\textsuperscript{74} \textit{Id}.
\textsuperscript{75} \textit{Id}. 
17, Section 106(3) to distribute copies to the public has been implicated by Defendant Frena. Section 106(3) grants the copyright owner “the exclusive right to sell, give away, rent or lend any material embodiment of his work.” . . . There is no dispute that Defendant Frena supplied a product containing unauthorized copies of a copyrighted work. . . . It does not matter that Defendant Frena claims he did not make the copies itself.76

In *Playboy Enterprises, Inc. v. Webbworld Inc.* the defendant posted photographs on its Web site in which plaintiff owned the copyright. Defendant allowed users to view and download copies of the electronic image file. The court held that Webbworld, thus, distributed the works by virtue of allowing users to “download and print. . . virtually exact reproductions of copyrighted PEI images.”

Also in *Central Point Software v. Nugent* the defendant offered plaintiff’s software for download on its bulletin Board which was considered to constitute distribution.77

In the three cases just discussed, no material object containing a copy of the work was transferred from one person to another, but the information necessary to make a new copy of the work on the computer of the recipient was transferred over the Internet. The recipient ended up with a copy of the work on her computer without the sender losing his own copy which remained accessible on the Web site. This is similar to ASP cases in which copyrighted parts of the software are transmitted over a network and stored in the RAM of the customer’s computer. The difference is that in the cases above, the works were downloaded and copies were made also on the hard-drive of the recipients’ computer. However RAM copies are considered copies of the work, even if no copy is made to the hard-drive of the computer. Simply because in the case of ASP a copy is made only to RAM and not the hard drive, it is insufficient to distinguish the mentioned ASP cases from the three cases mentioned above. ASP models in which copyrighted parts of the software are transmitted and stored in the RAM of the customer’s network, affect the distribution right.

But the decisions holding that the transmission of a work over a network violates the distribution right have been criticized, mainly on the ground that a violation of this right requires an actual dissemination of a copy of the work and that holding otherwise is contrary to the plain language and legislative history of the statute. In the context of transmission of a work over a network no material object78 is sold, given away, rented or lent, but a new copy of the work is made on the computer of the

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78. The case would, of course, be different, if the vendor gave a CD-ROM or a hard drive containing the computer program to the customer.
recipient. The making of a new copy, as we have seen, concerns the reproduction right, not the distribution right. Moreover, such an interpretation can also be based on the definition of “publication” which is relevant to the understanding of the term “distribution”. However, even if it might be preferable not to qualify the conduct involved in ASP-models as distribution, courts are likely to follow stare decisis and hold that where copies of copyrighted parts of the software are transmitted to the customer’s computer, the distribution right is affected. A vendor will therefore risk that a court qualifies its conduct as distribution.

But even if conduct qualifies as distribution, based on Title 17, Section 109, the copyright owner’s rights under Title 17, Section 106(3) are limited with respect to a particular copy once he has parted with ownership of it. This limitation of the distribution right is itself limited for computer programs. Unless authorized by the owner of copyright, a person in possession of a particular copy of a computer program may not dispose of it by rental, lease or lending or by any other act or practice in the nature of rental, lease or lending for direct or indirect commercial advantage. Although one could argue that a “rental, lease or lending” only takes place where a material object changes hands, this might not convince courts in the context of ASP. If, in qualifying a transmission as distribution, a court did not take into account the fact that no material object changes hands, it will likely also treat this fact as irrelevant when deciding whether the transaction taking place is a “practice in the nature of rental, lease or lending for direct or indirect commercial advantage” as mentioned in Title 17, Section 109(b)(1)(A). In particular, because economically the effect of ASP is similar to the one of a rental of the software, a court will likely qualify ASP as ‘practice in the nature of rental’ even though no physical transfer of a material object takes place. The limitation of Title 17, Section 109(a) would therefore not be applicable.

In conclusion, where no copies of copyrighted parts of the software are transmitted to the customer’s computer (e.g., where the user interfaces are not themselves protected), the vendor will not be distributing the computer program. This is a major departure from the usual software licensing transaction. Where transmission of protected parts is involved, courts are likely to hold that the distribution right is affected.

H. PUBLIC DISPLAY / PUBLIC PERFORMANCE

Moreover, especially where the ASP-model is one-to-many, it must be determined whether the exclusive right of public display or public performance is in any way affected. First it has to be examined whether the

79. Reese, supra note 47, at 128.
“publicity”-requirement is met. The relevant definition is the same for both public display and public performance. As defined in Title 17, Section 101 a performance or display is public, if a substantial number of persons outside of a normal circle of a family and its social acquaintances is gathered; or if a performance or display of the work is transmitted or otherwise communicated “to . . . the public, by means of any device or process, whether the members of the public capable of receiving the performance or display receive it in the same place or in separate places and at the same time or at different times.” In Title 17, Section 101, transmitting a performance and display is defined as communication “by any device or process whereby images or sounds are received beyond the place from which they are sent.”

How can these principles be applied to the case of a ‘one to many’ ASP-model? There is no doubt that “a substantial number of persons outside of a normal circle of a family and its social acquaintances” are involved. As far as a display or performance of the software takes place, a transmission is made by communicating by the process of sending data over a network from the vendor’s server to the customer’s computer. It does not matter that display or performance, if it takes place, is limited to members.81 That the customers are not gathered around the vendor’s server (and are, thus, geographically dispersed) is of no impact, since they are members of the public capable of receiving the transmission in separate places. The fact that the customers may receive it at different times is also irrelevant. Therefore, in cases of one-to-many ASP, the requirement of publicity is met.

The next question is whether the vendor actually displays or performs the software. The display right concerns literary, pictorial and graphic works. A computer program can therefore, be displayed. ‘Display’ is defined as meaning “to show a copy of the work either directly or by means of a film, slide, television image, or any other device or process or, in the case of a motion picture or other audiovisual work, to show individual images nonsequentially.”82

So, a display is the showing of a copy of the work.83 How does this concept apply in the context of transmissions over a network, e.g., the Internet? In *Playboy Enterprises Inc., v. Frena*, where copyrighted photo-

81. Thomas v. Pansy Ellen Prod., 672 F.Supp. 237, 240 (W.D. NC 1987) (plaintiff displayed copyright protected designs at a trade show; this was considered to be public even though limited to members); Ackee Music, Inc. v. Williams, 650 F.Supp. 653 (D. Kan 1986) (requirement of public is met where performance of copyrighted songs takes place at a private club).


83. Thomas, 672 F. Supp. at 239 (display of copyright protected designs at trade show); Sony Computer Entm’t Am., Inc. v. GameMasters, 87 F. Supp. 2d 976, 989 (D. Cal. 1999) (display of game covers to sell second hand video-games).
graphs could be looked at on and downloaded from the defendant's BBS, the court held that defendant had not only distributed the pictures, but also displayed them publicly. The court stated:

The concept of display is broad. . . . It covers "the projection of an image on a screen or other surface by any method, the transmission of an image by electronic or other means, and the showing of an image on a cathode ray tube, or similar viewing apparatus connected with any sort of information storage and retrieval system." H.R.Rep. No. 1476, 94th Cong., 2d Sess. 64 (Sept. 3, 1976), reprinted in 1976 U.S. Code Cong. & Admin. News 5659, 5677. The display right, thus, precludes unauthorized transmission of the display from one place to another, for example, by a computer system.84

Referring to that decision, the court, in *Playboy Enterprises v. Webbiworld, Inc.*, also held the defendant violated plaintiff's exclusive right to display the copyrighted works:

Webbworld allowed its paying subscribers to view PEI's copyrighted works on their computer monitors while online. Such action constitutes a display . . . .85

In *Video Pipeline, Inc. v. Buena Vista Home Entertainment, Inc.*, the court held the transmission of images of nonsequential scenes from a motion picture which occurred over the Internet and was made available to all members of the public to be public display.86

These cases all involve images being transmitted over the Internet, or a transmission by electronic or other means, and the display of the image on the end users computer monitor or similar viewing apparatus. In the case of a literary work, a "display" is usually the display of a copy that can be read, but also a transmission of the text that can be read through computer technology.87 The public display of the literal part of a computer program would therefore consist of publicly showing a copy of the source code, such as a display of the source code publicly on a screen.

As such, what does that mean in the ASP context? In an ASP model, a user-interface is copyright protected as a pictorial or graphical work and is transmitted from the vendor's server to the customer's computer and displayed on the customer's screen, the image is transmitted, by electronic or other means, and then displayed on a viewing apparatus connected with an information storage and retrieval system. This will, according to the cases previously discussed, constitute display of these works.

85. *Webbworld Inc.*, 991 F. Supp. at 543 (the defendant posted copyrighted photographs on its Internet Website).
87. 2-8 Nimmer on Copyright § 8.20.
Concerning the literal part of a computer program in the context of ASP there are various factual possibilities: (1) If the computer program is run on the vendor's server and none or only unprotected parts of it are transmitted to the customer's computer this does not constitute a display, because no copy of the work is shown, no work is being transmitted; (2) even if parts of protected code are transmitted to the customer's computer, this does not necessarily constitute a display. If the code ordinarily can not be read on the computer screen, the transmission, arguably, is not a display; (3) if, however, the ASP is based on a browser technology, the code can easily be read, which would be an indication that there actually is a display of the protected parts of the computer program that are transmitted and can be read this way.

Consequently, some ASP-models may involve displays of protected non-literal parts of the computer program or even of the code. But, under certain circumstances, it is also possible that no display of any work will be made.

The next question is whether a computer program is publicly performed in the context of ASP. The performance right is limited to literary, musical, dramatic, and choreographic works, pantomimes, motion pictures and other audiovisual works. Therefore, any graphical or pictorial works involved in the ASP cannot be subject to performance.

According to Title 17, Section 101, performing a work is defined as "to recite, render, play, dance or act it, either directly or by means of any device or process." The devices or processes can be "all kinds of equipment for reproducing or amplifying sounds or visual images, any sort of transmitting apparatus, any type of electronic retrieval system, and any other techniques and systems not yet in use or even invented." Most of the cases regarding the performance right concern dramatic works, motion pictures and audiovisual works, television, videos, musical works, etc. In one case concerning a computer game, the Fourth Circuit held that "performance" of a video game in an arcade constituted a "public performance." The court qualified the video game as an "audiovisual" work and the sequential showing of the images, which distinguishes performance from display, the non-sequential showing of individual images, as performance.

ASP models will, in most cases, not involve an audiovisual work. The computer programs are literary works, and their performance would consist of a reading to an audience. Nothing of this kind takes place in ASP. Moreover, "internal operations of a computer, such as the scanning of a

88. In IE: click "view"/"source"; in Mozilla: click "view"/"page source."
89. In IE: click "view"/"source"; in Mozilla: click "view"/"page source."
90. 2-8 Nimmer on Copyright §8.14.
work to determine whether it contains material the user is seeking" are not considered to be performance. Therefore, the performance right is not affected by ASP.

I. IMPACT OF ASP ON FIRST SALE DOCTRINE AND REVERSE ENGINEERING

ASP also has an impact on certain limitations of the exclusive rights of the copyright owner: the first sale doctrine and reverse engineering. According to Title 17, Section 109, the owner of a particular lawfully made copy may sell or otherwise dispose of the possession of that copy without the authority of the copyright owner. Such a sale does not infringe the rights of the owner under Title 17, Section 106(3). This exemption, known as the first sale doctrine, generally also applies to computer programs.

Therefore, if a software producer sells a CD-ROM containing a copy of its computer program, the buyer may resell this CD-ROM to a third party. If an ASP is structured in a way that the customer does not receive a copy of any copyright-protected part of the software, she does not become an owner of a copy, because she does not possess it. Even if a small part of the software is downloaded to the customer's computer (e.g., JAVA-applets) she will only be an owner of a copy with regard to this small part of the software. Therefore, the customer will not be permitted to dispose of possession of the computer program in any way. Consequently, if a software producer wants to circumvent the problem of the first sale limitation on her distribution right because she wishes to retain control over the copies of the computer program, ASP may well offer a possibility to do just that.

Moreover, under Title 17, Section 107, fair use of a work is exempt from the exclusive rights of the copyright owner. The technique of reverse engineering a computer program, in particular for building a compatible product or for designing an improved product qualifies as fair use under certain circumstances and is exempt from the exclusive rights.

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92. 2-8 Nimmer on Copyright §8.14.
93. See 17 USC §109(b)(1)(A) (2006). Computer programs may not be disposed of in the way of rental, lease or lending or by any other act or practice in the nature of rental, lease or lending for direct or indirect commercial advantage without the copyright owner’s authority.
94. Sega Enters. v. Accolade, Inc., 977 F.2d 1510, 1516 (9th Cir. 1992) (disassembly to gain access to ideas and functional elements of a computer program held to be fair use); Atari Games Corp. v. Nintendo of Am., Inc., 975 F.2d 832, 843 (Fed. Cir. 1992) (Case of reverse engineering where Atari was not in authorized possession of copy of the software. The court held that Atari’s reverse engineering, therefore, did not qualify as fair use.); DSC Commc’n Corp. v. DGI Techs., 898 F. Supp. 1183 (N.D. Tex. 1995) (disassembly of firmware held to be fair use).
In order to be permitted to invoke the fair use exemption, however, an individual must possess an authorized copy of the work. For example, in a case where the defendant knowingly exploited a purloined manuscript, the Supreme Court refused to qualify defendant's acts as fair use. Furthermore, in a case where Atari reverse engineered a computer program of Nintendo to create its own program to unlock a game system of Nintendo, the Federal Circuit Court held that Atari could not claim fair use because it did not possess an authorized copy of the work. The reverse engineering, thus, did not qualify as fair use.

In the ASP context customers will often not receive a copy of the software, or only very limited parts of it, such as with JAVA-applets. Under these circumstances they will not have an authorized copy of the work and, to the extent they don't have such a copy, will not be permitted to invoke the fair use exemption to reverse engineer the program.

These effects that ASP has on the first sale doctrine and reverse engineering-fair use may provide solutions for certain vendors, in their role as a licensor, and constitute a major difference to classic software licensing where these issues raise many problems and cause licensors to attempt to exclude the exemptions in the agreement.

IV. LICENSING ISSUES IN CONNECTION WITH ASP AND COPYRIGHT

A. VARIOUS FACTUAL POSSIBILITIES

What, then, are the licensing issues raised based on these conclusions? It bears noting first, that there are various possible factual backgrounds to consider. These range from technical issues, such as a server-client or Internet browser based solution, to ownership of the rights in the software, as in a vendor, customer, or third party, who is licensing the software from the owner. Other scenarios to consider are whether there already is a license or whether a new license is negotiated at the point of sale, and, of course, the various possible terms in an already existing license agreement between the third party owner of the rights in the software and the licensee. Regarding these factual possibilities, the following remarks are based on the assumption that the rights in the

96. Atari Games Corp., 975 F.2d at 843.
97. Since this article concentrates on ASP, the many problems these issues raise in regular software licensing are not extensively discussed. However, regarding exclusion of reverse engineering, reference is made to the following case: Davidson & Assocs. v Internet Gateway, 334 F Supp 2d 1164 (E.D. Mo. 2004) (users waived reverse engineering-fair use defense by accepting terms of agreement). Regarding first sale and software see John A. Rothchild, The Incredible Shrinking First-Sale Rule: Are Software Resale Limits Lawful?, 57 Rutgers L. Rev. 1 (2004).
software are owned by a third party. Moreover, because this article examines copyright implications of ASP-models, the following is based on a situation where the owner licenses the software to the vendor.

B. SUFFICIENT RIGHTS FOR VENDORS

1. Rights Needed by the Vendor to Use Software in an ASP Model

If a vendor offers software for access and use by customers in an ASP-model she needs sufficient rights for such use. Where there is copyright protection of the software, the vendor needs an adequate license from the owner. If she does not have such a license, her use will very likely infringe the copyright of the owner. Also, even if the vendor has a license from the owner, where the use of the software in an ASP-model exceeds the scope of such a license, and the specific use is protected by copyright, such use would infringe copyright and possibly violate the license agreement.

Based on the examination regarding the exclusive rights affected by ASP and depending on the circumstances of the specific case, the vendor must have a license covering the following rights in order to avoid infringing the copyright by using the software in an ASP-model. First, the license must cover the right of reproduction, in order to install the software on the vendor's server and to allow a third party to make RAM copies. Second, the license may grant a right to sublicense the reproduction-right to the customer where the customer is making reproductions in the RAM of her computer or on the server of the vendor, at least as far as this is not permitted by Title 17, Section 117(a). The license must also include the right to prepare derivative works in situations where the vendor plans to customize the software. As a precaution, the vendor should have the right to distribute copyrighted parts of the software (e.g., user interfaces or JAVA-applets), when such parts are transmitted to and reproduced in the RAM of the customer's computer. Finally, the license should grant the vendor public performance and public display rights when the software is used in an ASP-model. In this respect, consider that where the license explicitly mentions that the vendor is permitted to use the software in an ASP model and, in particular, where the permitted ASP-use is described in detail, the rights mentioned previously may not necessarily have to be enumerated explicitly, but may be read into the license implicitly by the court when it is interpreted in a specific case.

Furthermore, there is no special or exclusive right under copyright law for ASP-uses. Therefore, under certain circumstances, the vendor arguably does not need a specific license to use the software in an ASP-model, unless there are restrictions in the license, such as a limit to the number of users, which limit the scope of the license. Such circum-
stances include situations when: (1) the vendor loads the software into the RAM of the server herself; (2) no copyrighted material is transmitted to the customer's computer, as in a server-client application, there is no protected user interface, or no JAVA-applets; and (3) one takes the position that in an ASP-model the software is not publicly performed. From a practical perspective, however, vendors should not rely on such a position and explicitly include in the license any rights that they might need.

2. Interpretation of Existing Licenses

When a license between the vendor and the owner already exists, whether use of the software in an ASP-model is permitted by the license must be examined based on the specific license, and take into account the rights needed by the vendor as mentioned previously.

The language used in a license is critical when determining the scope of a license and when deciding whether certain rights have been licensed. Furthermore, technological change can alter the meaning of a license term. In the past, courts have had to reinterpret already existing license agreements in order to determine whether the license granted a licensee the right to use the work using a new technology. When reproduction, distribution, display and performance are not explicitly mentioned in an existing license agreement, the courts will likely examine whether the intent of the parties included such use in the license scope. From a practical perspective, however, it seems rather unlikely that a license agreement in which the parties did not contemplate a use of the software in the ASP context should contain language which can be reinterpreted to cover all of the rights mentioned previously.

On the other hand, license agreements between vendors and owners will often contain restrictions on the license's scope that prevent use of the software in an ASP-model. For example, when the license prohibits use of the software in a multi-station environment, ASP-use of the software is not possible because in an ASP-model, the customer's computer has a similar function as a client in a multi-station system. The license may also prohibit using the software in connection with a prepress service bureau and, thereby prohibit using the software for third parties. In the ASP context, the use of the software is similar to a prepress service bureau model. Moreover, so-called CPU clauses may limit the license so that the software may only be used on a certain identified CPU or network. When the license agreement contains such a clause and the customer's computer is not mentioned as an identified

98. 1-5 Law of The Internet §5.01.
99. Id.
100. Gruetzmacher, supra note 8, at 63.
101. Id.
CPU, ASP-use of the software is not permitted with respect to this customer's computer. Finally, a license may explicitly prohibit using the software in an ASP-model.

3. New Licenses

If a vendor wants to use software in an ASP model, she should not assume that a standard software license is sufficient for these purposes. For a vendor who wants to use software in an ASP model and is entering into a new license agreement with the owner of the rights, it is important that the kind of use she intends for the software is explicitly mentioned in and permitted by the scope of the license.102 Moreover, in a new license, depending on the facts of the specific case, the vendor should also explicitly and clearly include all the rights necessary. On the other hand, an owner who does not want to permit use of his software in an ASP-model should explicitly exclude such use from the scope of the license. This is especially important when the license permits use of the software on a network, on multiple computers, or by multiple users.103

C. Customers' Rights

After having examined what the vendor needs in a license from the owner of the rights in the software, the next question is: What rights does a license to the vendor grant to the customer?

1. License for Server-Client Software or for Browser Software

As previously mentioned, the customer must have a right to use the server-client or the browser software (depending on the ASP model) and likely must have a license for such use. This does not, however, raise special licensing issues when compared to regular software licensing.104

2. Sublicense of Software Provided by a Vendor

When considering the software that is used by the customer in the ASP model it must be determined on a case by case basis whether the customer needs to have a license at all. From a theoretical perspective it is conceivable, as already mentioned, that in a specific case no license is needed by the customer at all. Such instances include circumstances when the vendor loads the software into the RAM of its server, and no copyrighted material (e.g., user interface or JAVA-applets etc.) is transmitted to the customer's computer over the network, which does not re-

102. As is always the case when entering into a license agreement it is important that the licensor really is capable to grant all the rights in question, either because he is the owner or because he is permitted to sublicense them.
103. See Gruetzmacher, supra note 8, at 63.
104. Supra pt. III.F.1; see also Gruetzmacher, supra note 8, at 61.
result in a copy of copyrighted material made in the RAM of the customer's computer. From a practical perspective, and as a precaution, the customer may want to demand that her contract with the vendor contain a license permitting the use of the software that the customer intends to employ, or a clause that indicates such use will not infringe any third party rights in the software.

In most cases other than the one just described, the customer will likely need a sublicense from the vendor in order to avoid infringement claims of the copyright owner. It is of the utmost importance for the customer that the vendor has obtained all rights necessary in connection with the ASP from the copyright owner. From the customer's perspective, the agreement with the vendor should contain clauses safeguarding against the possibility that the vendor does not have all rights necessary. Such clauses will include warranties and indemnifications.

D. Example of an Existing License Between the Software Owner and Vendor: The ASP and the General Public License

1. Brief Introduction to the General Public License

The General Public License ("GPL") covers copying, distribution, and modification of the licensed software. GPL software is often called "open source" software. The GPL provides, in particular, that the licensee may copy and distribute the work in source code (Section 1 of the GPL). The licensee may also modify the software as well as copy and distribute its object code. Modification, copying, and distribution of the object code are, however, subject to certain conditions (Section 2 and 3 of the GPL), such as that the source code must be made available under certain circumstances.

2. Is a Vendor permitted to make GPL software available on an ASP platform?

Is a vendor permitted to make a GPL software available in object code on an ASP platform at all? According to the GPL, the vendor is permitted to copy the software in object code onto her server. Also, she may distribute the software. The customer may load the software into the RAM of the vendor's server or its own computer, since she also receives a GPL license to the software. The vendor may even modify the GPL software. All this is permitted under the GPL, although certain conditions are imposed in connection with such use.

105. See Berger, supra note 19, at 673.
106. It would go too far to discuss this issue in detail in this article.
Therefore, even if the customer downloads part of the software (e.g., a user interface, or JAVA-applets) on her computer, such use should be permitted under the GPL as long as the ASP is not qualified as public performance of the software. If, however, the ASP is qualified as public performance it is, arguably, not covered by the GPL, because the GPL only covers copying, distribution, and modification, but not public performance.\textsuperscript{107} Even if one takes such an approach, the GPL may nevertheless implicitly permit such a use. Where copying and distribution is permitted, public performance (making the software available over a network) was not necessarily meant to be prohibited.\textsuperscript{108} On the other hand, although using GPL software in an ASP model may be permitted if certain conditions set forth by the GPL are met by the vendor,\textsuperscript{109} there remain certain doubts as far as the right of public performance is concerned. Unfortunately, the draft for a new version of the GPL ("GPLv3") does not explicitly address the issue of the ASP context. Based on the comments of the drafters regarding software for public use on network servers it seems that they did not want to deal with this issue, because they do not want to divide "free software developers from free software users."\textsuperscript{110}

3. Restrictions and conditions

a. Copying and Distribution of Object Code

If a vendor offers the use of GPL software and makes the object code accessible over a network to the vendor must meet certain conditions. When copying or distributing the software in object code, the vendor must offer the corresponding machine-readable source code in one of the ways provided in section 3(a)-(c) of the GPL. It is likely easiest for the vendor to comply with this requirement by making "a written offer, valid for at least three years, to give any third party, for a charge no more than" the "cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code."\textsuperscript{111} Although

\textsuperscript{107} §0 GPL ("Activities other than copying, distribution and modification are not covered by this License; they are outside its scope.").


\textsuperscript{109} See Bettinger and Scheffelt, supra note 11, at 736 (for the corresponding German laws).


\textsuperscript{111} §3(b) GPL. It also has to be kept in mind that any copying or distribution of verbatim copies of the software's source code requires that an appropriate copyright notice and disclaimer of warranty be published on each copy, all notices that refer to the GPL and the absence of any warranty be kept intact and a copy of the GPL is given to each recipient of the software. §1 GPL. See Bettinger and Scheffelt, supra note 11, at 736.
the GPL does not permit or require a license fee for the licensing of the GPL'd software, it does not prohibit asking for a fee in connection with the distribution of the software. Moreover, the vendor will likely also render other services to the customer in addition to making available the software (e.g., data-storage, maintenance of the server). For such accessory services, the vendor can charge a fee. Therefore, when as will often be the case - the ASP is mainly motivated by the additional services the vendor renders, and not by the specific software, it will still be possible for the vendor to obtain adequate fees even if GPL software is used.

b. Modifications to the GPL Software by the Vendor

Another issue raised by the GPL is what restrictions and conditions the GPL places on the vendor in a case where he modifies the software. Section 2 of the GPL permits the licensee to modify GPL software under the condition that the licensee must also license any modified work she distributes or publishes under the GPL to all third parties at no charge.

This issue raises the question of whether a vendor in an ASP-model would have to make available the source code to the modifications or whether a vendor could keep the modifications proprietary as long as a vendor only offered them in the ASP-context. According to the language of section 2(b) of the GPL, a vendor can keep the modification proprietary as long as a vendor does not distribute or publish it. The answer to the question therefore hinges on whether the vendor distributes the modification. As discussed above (see III.G above) where no copyrighted parts of the software are transmitted from the vendor to the customer over a network in the ASP context there is no distribution. Thus, as long as the modifications are not transmitted from the vendor's server to the customer's computer over the network, the vendor does not distribute the modification, may keep such modifications proprietary and does not need to disclose her source code.

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112. GNU Project, Frequently asked questions about the GNU GPL, http://www.gnu.org/licenses/gpl-faq.html (last visited Jan. 15, 2007). However, no fee may be charged for use or redistribution of the software. Thus, it has to be taken into account that if someone pays the fee and gets a copy, the GPL gives them the freedom to release it to the public, with or without a fee.

113. This means that the source code of the modification has to be made available and that others may copy and (re)distribute the software under the GPL.

114. There are other conditions imposed on the licensee in connection with modifications. For details see §2 GPL.

115. It also has to be kept in mind that the mere aggregation of another work not based on the GPL software together with the GPL software on a volume of a storage (e.g., on the vendor's server) does not bring the other work under the scope of the GPL. This means that if the vendor puts a GPL program as well as non-GPL software on her server, she does not have to comply with the GPL regarding the non-GPL software.
Therefore, an ASP model may be used (and may be particularly attractive) to exploit modifications made to GPL'd software by the vendor and still keep the modification proprietary.

c. **Affero GPL**

The outcome that modifications to GPL software can be kept proprietary when using an ASP-model may seem undesirable for the owner of the original GPL software. She may feel that the GPL is insufficient in this respect.

This issue has been addressed by the Affero Project ("Affero").\(^{116}\) Affero has recognized that there are open questions regarding the application of the GPL to software run over a network. To take care of certain shortcomings of the GPL in this respect, Affero published a new license in March 2002: the Affero General Public License ("AGPL"). The AGPL is in large part identical to the GPL, but contains the following additional provision:

If the Program as you received it is intended to interact with users through a computer network and if, in the version you received, any user interacting with the Program was given the opportunity to request transmission to that user of the Program's complete source code, you must not remove that facility from your modified version of the Program or work based on the Program, and must offer an equivalent opportunity for all users interacting with your Program through a computer network to request immediate transmission by HTTP of the complete source code of your modified version or other derivative work.\(^{117}\)

This additional provision will likely apply to many cases of ASP and prevent keeping modifications to AGPL'd software proprietary. The critical issue will usually be whether the AGPL'd software was *intended* to interact with users through a computer network. This question will have to be looked at and answered in each specific case.

Therefore, the issue that modifications to GPL software can be kept proprietary in an ASP-model has been successfully addressed by the AGPL.

E. **EXAMPLE OF APPLICATION IN AGREEMENTS BETWEEN THE VENDOR AND THE CUSTOMER: AGREEMENTS CONCERNING WEB BASED E-MAIL SERVICES**

1. **Hotmail**

The Service Agreement of Hotmail distinguishes between service and software. Regarding service, sections 3 and 4 of the agreement pro-


\(^{117}\) §2(d) AGPL.
vide how the customer may or may not use Hotmail’s service. These provisions, however, do not explicitly address copyrights or rights to any protected works. They are general provisions for the use of Hotmail’s service. Section 10 of the agreement, however, concerns software and states:

If you receive software from us as part of the service, your use of that software is under the terms of the license that is presented to you for acceptance for that software. If there is no license presented to you, then we grant you the right to use the software only for the authorized use of the service on that number of computers stated in your service offer. We reserve all other rights to the software. . . . You will not disassemble, decompile, or reverse engineer any software included in the service, except and only to the extent that the law expressly permits this activity. 118

Section 10 is aimed at software that is distributed to the customer in the traditional way. It will, however, also cover any parts of software that may be transmitted to the customer’s computer in the course of the ASP, such as e.g., JAVA-applets. It grants the rights necessary for the customer to use the software for the service. Also, they prohibit reverse engineering. Where the customer actually receives a copy of the software, which is the prerequisite for the application of section 10, this practice makes sense, because the effect of ASP is limited to situations where no protected part of the software is made available to the customer. The agreement, therefore, covers the issues necessary, from a copyright licensing perspective.

2. Yahoo!

The Agreement of Yahoo! for its services provided over the Internet also has a specific clause in “Yahoo!’s Proprietary Rights.” Section 18 sets forth the following:

You acknowledge and agree that the Service and any necessary software used in connection with the Service (“Software”) contain proprietary and confidential information that is protected by applicable intellectual property and other laws. . . . Except as expressly authorized by Yahoo! . . . you agree not to modify, rent, lease, loan, sell, distribute or create derivative works based on the Service or the Software, in whole or in part.

Yahoo! grants you a personal, non-transferable and non-exclusive right and license to use the object code of its Software on a single computer; provided that you do not (and do not allow any third party to) copy, modify, create a derivative work from, reverse engineer, reverse assemble or otherwise attempt to discover any source code, sell, assign, sublicense, grant a security interest in or otherwise transfer any right in the Software. You agree not to modify the Software in any manner or form,

nor to use modified versions of the Software . . .

Section 17 also is aimed at software distributed to the customers. As in the case of Hotmail, Yahoo!'s agreement will also cover any parts of the software that may be transmitted to the customer's computer in the course of the ASP relationship and grants to the customer all rights necessary to use the software provided in connection with the service. Section 17 also contains a number of limitations of the grant, such as a prohibition of reverse engineering, which also appears in the Hotmail agreement. Section 17 also covers all the issues relevant to the vendor and customer relationship from a copyright licensing perspective.

3. Gmail

The Gmail Terms of Use ("ToU") sets forth that the service is for personal use only. Regarding intellectual property rights, section 5 of the ToU states:

You acknowledge that Google owns all right, title and interest in and to the Service, including without limitation all intellectual property rights (the "Google Rights"). . . . Accordingly, you agree that you will not copy, reproduce, alter, modify, or create derivative works from the Service. The Google Rights include rights to (i) the Service developed and provided by Google; and (ii) all software associated with the Service.

Section 5 of the ToU is different from the corresponding Hotmail and Yahoo! sections in that it does not explicitly grant to the customer the rights needed to use the service or any software necessary to use the service. On the one hand, this could be viewed as an expression of the fact that, in an ASP the customer does not necessarily use the software in a way that affects any exclusive rights enumerated in the Copyright Act. Should a license to the customer be necessary, such a license may implicitly be read into other provisions of the ToU or be derived from the fact that Google makes the service available to the customer.

On the other hand, the ToU contains limitations, including a prohibition regarding reverse engineering, which would not be necessary, so long as no protected parts of the software are transferred to the customer's computer, which the lack of an explicit license implies. However, from the perspective of the licensor, it makes sense to include such prohibitions, even if no license is explicitly granted, as a precaution for a case where some protected works are transferred to the customer's computer.

V. CONCLUSION

ASP is primarily defined by the following three requirements: the vendor is responsible for hosting a software application (the rights to which are often owned by a third party) on a server; the vendor enables the customer to access the software over a network; and the customer uses the software either through a browser or a client on his computer, but the software application itself is not installed on the user's computer.

ASP may involve various types of conduct that affects the owner's copyright. The installation of the software on the vendor's server and of any software (such as, client-server software or browser software) on the customer's computer are reproductions of the works concerned, which will, in most cases, be covered by the ordinary licenses. Where browser technology is used RAM copies of small parts of copyright protected software may be made on the customer's computer. In some cases, however, no reproduction that is relevant under a copyright perspective takes place on the customer's computer. This differentiates ASP from traditional software licensing, where the relevant reproduction takes place by installing and running the software on the end user's computer.

However, RAM copies are always made on the vendor's server. It is possible that these copies are initiated by the vendor and will generally be covered by the license the vendor received from the owner of the copyright to the software. In certain cases, the customer will cause the RAM copy to be made. Whether this customer's copy is permitted under copyright law first depends on the license the vendor has received. Arguably, such RAM copies are also permitted under Title 17, Section 117(a), even though some courts might decide otherwise. Where multiple RAM copies of the software are made, e.g. by various customers using the software independently of each other at the same time, the customer's copy would likely not be covered, because Title 17, Section 117(a) only permits the making of another copy.

Where the RAM copies on the vendor's server are lawfully initiated by the vendor and no RAM copies are made on the customer's computer, the customer's use, which consists of simply using the software, does not affect any other exclusive right under Title 17, Section 106. Even though this is also true for traditional software licensing, the rule that not all "use" of a copyrighted work is covered by the copyright owner's exclusive rights has more importance in the ASP context.

Whether the distribution right is affected by ASP depends on the specific facts of a case. Where a browser technology is used, it is conceivable that certain copyrighted parts of software are transmitted over the network and stored in the RAM of the customer's computer. In these cases, courts will likely view this to be distribution. In many ASP cases, however, no such transmission will take place and, therefore, the distri-
bution right will not be an issue. This is another major distinction in traditional software licensing, where the work is usually transferred from the vendor to the customer which affects the owner's distribution right.

In certain cases, where non-literal copyrighted parts of the software are transmitted from the vendor's server to the customer's computer and displayed on the customer's screen, this will constitute a public display of these works. Also, arguably the transmission of literal parts of the computer program to the customer's computer (e.g., if they can be viewed easily in an Internet browser) may be considered by courts to be a public display of these works. In the context of ASP, however, there will be many cases in which the display right is not affected.

ASP also has an impact on certain limitations of the exclusive rights of the copyright owner. Since the customer will not receive a lawfully made copy of the software, she will not be able to rely on the first sale doctrine or reverse engineering-fair use exception. This is also a difference to traditional software licensing transactions where these issues raise many problems and licensors often have to try to exclude the exemptions in the agreement.

Based on these observations, existing copyright law is sufficient to deal with the copyright issues that arise in the ASP context. ASP raises questions that: 1) concern all computer programs, such as the question regarding RAM copies and reproduction; and 2) have been addressed in the context of online use of works other than software, such as the problems of distribution and public display of works on the Internet. However, ASP has special implications for both of these contexts. In the case of RAM copies, ASP raises the question on how Title 17, Section 117(a) applies to RAM copies made on the vendor's server by and for the customer. Regarding the online use of works, software is different from pictures and music, which most existing cases address. Moreover, ASP is different because parts of the copyrighted work are not transferred in all cases.

Regarding the copyright aspects of licensing, the consequences of the observations discussed previously for the vendor and the customer must be distinguished. The vendor must ensure that the license she receives from the software owner covers all the rights she needs in a specific case. Under certain circumstances, such as when the vendor loads the software into the RAM of the server herself and no copyrighted material is transmitted to the customer's computer, the vendor does not need a specific license to use the software in ASP; whether she is permitted to use the software in such a way depends on whether there are restrictions in the license, such as limited number of users, CPU-clauses, etc. From a practical perspective, however, vendors will not want to rely on such a position and should explicitly license any rights that might be required.
Existing licenses will raise the question whether they permit use of the licensed software in an ASP model. Whereas some licenses can be interpreted to permit such a use, such as the present GPL, others will contain clauses that prohibit it, such as prohibition of use in multi-station environment, CPU-clauses, interdiction of use in connection with a “service bureau,” or even explicit prohibitions of ASP. In new licenses, these issues should be addressed explicitly, as has been done, for example, in the AGPL.

The customer also needs a license for the server-client or for the browser software. Regarding the ASP-software, the customer will, in certain cases, not need to have a license at all. This is true where the vendor loads the software into the RAM of its server and no copyrighted material is transmitted to the customer’s computer. The Gmail ToU, for example, reflects this position to a certain degree. On the other hand, there are also ASP-models in which the customer will need a (sub)license by the vendor in order to avoid infringement claims, which the Hotmail and Yahoo! agreements take into account.

Therefore, ASP also raises issues new to software licensing. In certain cases, the end-user of the software does not actually need a license, under certain circumstances, the vendor will need rights he did not need in traditional software “distribution” and licensing, such as the display right.

Consequently, copyright is ready and able to deal with ASP, and software licensing need not be reinvented. However, to avoid complications, the copyright implications must be considered in ASP transactions and ASP must also be considered when dealing with software licenses.