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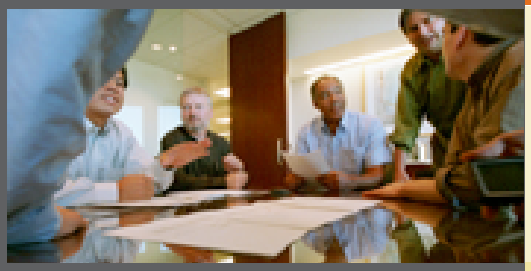

Acquiring and Protecting Technology: The Intellectual Property Audit

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FENWICK & WEST LLP

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I. INTRODUCTION

For many companies in the computer industry and other information-related industries, intellectual property may comprise a substantial, if not the major, part of the company's assets. The company therefore has a crucial interest in ensuring that appropriate steps are taken to create, perfect and maintain intellectual property assets. Creditors lending to such companies also have an important interest in ensuring that such intellectual property assets are preserved and perfected, as creditors often wish to take security interests in the intellectual property assets of the company.

A growing number of companies, both large and small, are acquiring high-technology companies or the proprietary rights to state-of-the-art products. Such acquisitions quickly make available technology that would have taken years to develop internally and allow companies to move into market niches not otherwise available to them.

Acquiring technology-based assets, however, is somewhat more complicated than acquiring more traditional tangible assets such as buildings, finished goods or raw materials. Although these traditional assets can be physically inspected for most defects that would seriously affect their value, the value of a technology-based asset is often more a function of how well protected it is by intellectual property rights and how well it functions. Companies acquiring intellectual property assets — from consultants by assignment, in mergers and acquisitions, and by license — must therefore ensure that they can acquire good and unencumbered title to intellectual property rights and that such title is perfected and priority established vis a vis subsequent transferees.

A. Why an Intellectual Property Audit is Necessary

Companies that own intellectual property assets, companies that desire to acquire such assets from a third party, and creditors lending to technology-based companies all have a need for a reliable mechanism to determine the ownership, scope and status of intellectual property rights. An "intellectual property audit" of the company provides such a mechanism and enables the detection of defects in intellectual property rights that may affect the value of the company's assets so that corrective measures may be taken.

In general terms, one should undertake an intellectual property audit:

- To determine the origin of intangible assets and the extent of the owners' interest in technology and related intellectual property rights
- To determine the scope of rights that third parties may have, by license, ownership, or otherwise, in the owners' assets

- To institute systematic procedures for protecting and perfecting intellectual property rights

- To detect defects in existing intellectual property assets and the mechanisms and procedures for protecting and perfecting the same

- To detect instances in which early measures may be needed to avoid some of the more common defenses available to misappropriators and infringers (such as estoppel, laches and waiver)

- To determine, in contemplation of intellectual property litigation, whether all filings necessary for jurisdictional requirements have been satisfied, what clouds on the owner's title may exist, and what defenses may be asserted against the owner

- To avoid liability for third party claims of infringement resulting from the development of new products

An intellectual property audit can benefit the following persons:

Buyers Who Are:

- Acquiring a high-technology manufacturing or service organization

- Acquiring high-technology assets

- Purchasing a company primarily to get rights to its technology

- Purchasing licensing or distribution rights

- Purchasing a license to make, use or sell a product or process

- Purchasing rights to a product under development

Owners Who Are:

- Depending upon intellectual property as a principal component of their company's value

- Licensing technology assets to others with indemnities

- Facing possible litigation involving their intellectual property

- Experiencing market share erosion from knockoffs or pirated copies

- Selling a high-technology manufacturing or service organization
- Selling high-technology assets
- Managing the intellectual property of a subsidiary or affiliate
- Engaging in domestic or international commerce involving high technology products
- Considering changing the tax status or accounting method for their technology
- Parties to ambiguous licensing or distribution agreements

Investors Who Are:

- Considering funding a start-up company
- Financing an existing technology-based business
- Considering accepting a security interest in intangible assets
- Entering a joint venture with a technology partner
- Underwriting a public offering of a high-technology company

In the context of an acquisition or license of technology, an audit can enable the buyer and seller to learn a great deal about the legal status of the intellectual property rights before the transaction takes place. The audit will enable the buyer to know the precise scope of its rights to use, sell, license, distribute, and modify the intellectual property at issue, as well as the degree to which it can prevent other parties from exercising or obtaining rights. With this information, the buyer can better avoid overestimating the value of an asset as a result of unawareness or miscalculation of the correct status of intellectual property rights in that asset.

The results of the audit may enable many risks to be reduced or eliminated before culmination of the transaction. The seller (on its own or on behalf of the buyer) may gain a tactical advantage by negotiating with potentially adverse parties before they become aware of the pending transaction and can use this information to attempt to leverage its position.

The audit may provide an equitable basis for adjusting the purchase price in view of uncovered risks that cannot be eliminated. Alternatively, a more useful indemnification or guaranty may be crafted that specifically identifies any substantial risks revealed by the audit, and the seller may more accurately gauge the scope of risk entailed in warranties and indemnifications being offered as part of the transaction. Significant general business information generated by the audit may prove useful after the acquisition.

B. When an Intellectual Property Audit Should be Undertaken

An intellectual property audit is appropriate before a significant acquisition of technology — through merger, stock purchase or other acquisition of assets, or by license or the taking of a security interest. An audit should also be performed in the early stages of a technology company's formation to institute systematic procedures for protecting and perfecting intellectual property rights, and at critical junctures in a company's life cycle to ensure the continuing adequacy of such procedures and to detect defects therein.

An intellectual property audit is also appropriate in conjunction with development of, or due diligence in connection with the acquisition of, a major new product, particularly if such product carries with it a demonstrable risk of infringement of the intellectual property rights of others. Such risk might be especially high, for example, in the development of a "clone", "workalike" or "compatible" product. An audit might be necessary to institute, or to review the adequacy of, "clean room" procedures used in the development of such a product to reduce the risk of infringement of third party rights. Clean room procedures are discussed in detail below.

Finally, an intellectual property audit of limited scope may be necessitated in response to a change or new development in the law. For example, a new case decision expanding or clarifying the scope of protection afforded by an intellectual property right — such as the scope of copyright protection for computer program user interfaces or the scope of patent protection for computer program algorithms — may necessitate review of existing products for possible infringement of the rights of others.

C. Recent Legal Developments Affecting the Need for an Audit

Several recent legal developments, many of which are discussed in more detail below, have increased the need for intellectual property audits:

Work Made for Hire Doctrine

The Supreme Court in 1989 significantly redefined the "work made for hire" doctrine of copyright law. The effect of the Court's decision is to narrow significantly the circumstances under which a hired work will be deemed to be a "work made for hire" owned by the hiring party. Most independent computer programmers and computer consultants will probably not fall within the Court's revised definition of "work made for hire" and will therefore initially own the copyrights in the works they produce. It is therefore more crucial than ever to ensure that consultants do work only pursuant to written agreements assigning ownership of the work to be produced, and all intellectual property rights therein, to the hiring party before work begins. An audit should be performed of all existing works in which consultants participated to ensure that the company — and not the consultant — owns title to the work.

Patents for Software

In the last five years, the U.S. Patent and Trademark Office has begun granting patents for software in record numbers. The availability of patents for software has required that

computer industry companies rethink in fundamental ways their strategic approaches with respect to intellectual property rights and the appropriate mix of patent, trade secret and copyright rights that should be sought and the emphasis to be placed on each. It is now more important than ever that adequate procedures be implemented for filing, maintaining and policing patent rights with respect to software and other computer-related inventions.

Expanding Scope of Copyright Protection

Also in the last five years, the federal courts have expanded enormously the scope of copyright protection available for computer-related works. Copyright may now cover, in addition to the literal line by line code of a computer program, the structure, sequence and organization of a program, many aspects of its user interface and menu hierarchy, and perhaps more "invisible" aspects of the program such as file structures and input formats.

This tremendous expansion has two implications for intellectual property audits. First, it makes copyright protection a much more powerful form of intellectual property for computer and software companies, making it crucial that adequate procedures be in place to perfect and enforce copyrights. Second, it increases greatly the potential risk of infringement of third party copyrights in the development of new products, particularly "clone", 'workalike" or "compatible" products. Careful audit procedures should be in place to review the third party materials and products that developers have access to, and, in appropriate circumstances, to institute "clean room" procedures to reduce the risk of infringement.

Change in Procedure for Perfecting Security Interests in Copyrights

A recent very important case, discussed in further detail below, changes the commonly used procedures for perfecting security interests in copyrights, and now requires that security interests in copyrights be perfected by filing with the U.S. Copyright Office, rather than through the state Uniform Commercial Code filing system. Institutions holding security interests in copyrights should conduct an audit of the manner in which such interests were perfected to ensure that the necessary filings with the Copyright Office have been made and, if not, that such filings are done as soon as possible.

Misuse of Copyright Through Failure to Disclose Preexisting Material

Another recent case of potentially great significance, discussed in more detail below, ruled that a company had committed copyright misuse by failing to disclose, both in its copyright registration application and to the court in an infringement action on the copyright, that its computer program was a derivative work based upon a preexisting computer program. This case makes it crucial that companies conduct an audit of all copyright registrations to ensure that errors have not been made in the registration process — such as failure to disclose the derivative nature of a work — that might jeopardize the enforceability or validity of the copyrights.

II. STRATEGIES AND METHODOLOGIES

A. Scope and Cost of the Audit

The appropriate scope of the audit is determined by the type of property involved and the value and nature of any particular transaction in conjunction with which the audit is being undertaken. If a buyer is contemplating an acquisition of a substantial ownership interest in a seller or its assets, an audit of full scope covering all intellectual property assets of the seller may be appropriate. The buyer should investigate whether the seller has properly obtained copyright, patent, trademark and trade secret protection for its products, the scope of any third party rights in the seller's assets, whether the seller has hired employees away from its competitors under circumstances that could lead to a lawsuit, and whether the products may infringe third party rights, either by virtue of the nature of the products themselves or by virtue of events occurring during the development of the products.

Similarly, if a company is conducting an audit of its company-wide procedures for acquiring, perfecting and enforcing its intellectual property rights, an intellectual property audit of broad scope is appropriate.

Audits more narrow in focus may be appropriate in other circumstances. For example, if a company is facing possible trademark litigation, an investigation limited to the trademark at hand may be all that is required. Alternatively, audits confined to examination of the "clean room" procedures used to develop a particular product in question may be undertaken.

Before undertaking an audit, the parties involved should do a cost/benefit analysis based on the particular circumstances. The broader the investigation, the more information that will be gleaned, but the higher the cost. The more that is at stake in the transaction prompting the audit, the greater the value of the knowledge produced by the audit. An audit of limited scope to simply train company personnel in the proper procedures for protecting intellectual property in the future may cost from $1,000 to $3,000. A specialized limited audit focusing on a narrow set of predefined issues or products may require in the range of $2,000 to $10,000. A comprehensive audit in the context of a major transaction or a company-wide audit of all existing intellectual property assets may cost more than $10,000.

The scope of the audit may be chosen, for example, to answer one or more of the following questions about a company's property:

- What was the origin of the property?
- When was it first conceived and when was development completed?
- Who are the people who could claim to be an inventor or author?

- What types of intellectual property might be available to protect the property?
- Did any person use any trade secrets or copyrighted or patented technology of others in the development, support, or enhancement of the property?
- Does any third party have intellectual property rights that could be violated by past or future uses of the property?
- Have any offers of licenses or assertions of property rights been received?
- If consultants were used in the development of the property, have adequate measures and agreements been used to protect the proprietary interests of the hiring party and to ensure that the hiring party owns the rights to property developed by the consultant?
- If any part of the property was purchased or licensed from third parties, what rights were acquired and are there obligations that have been or could be breached that might cause a reversion of rights?
- Has the property been licensed to or derived under work with a government agency requiring special procedures in order for rights to be retained by the developer?
- Have necessary federal and state registrations been made, and transfers recorded with appropriate agencies?
- Have required affidavits of use or other post-registration requirements (such as payment of maintenance fees) been complied with?
- Has the property been used to secure performance of any obligations?
- Do third parties own any license rights, joint ownership rights or other rights in the property?
- Is the property substantially similar in function, appearance or coding to the property of others?
- If unique portions of the property are held in escrow, what are the conditions for release?

B. Pre-Audit Preparation

To maximize audit efficiency and to minimize audit cost and disruption to ongoing business activities, careful pre-audit preparation should be undertaken.

Who Should Perform the Audit

The designation of who is to perform the audit will depend upon the nature and scope of the audit. A company's own personnel may have sufficient familiarity with the facts and issues involved to perform an audit, especially if it is narrow in scope. Generally, because of the inherently legal nature of an audit, a company's in-house legal counsel (if there is one) should be involved in the audit, at least in a coordinating role. In more complex situations, however, it is doubtful that company personnel alone will have either the time or expertise to perform a full scale audit. In such situations, outside legal counsel should probably conduct the audit.

When outside legal counsel is used, it is preferable that such counsel have expertise in the technology involved, as well as in the legal principles respecting intellectual property and in the procedures for conducting an audit. Counsel should also have substantial experience in providing remedies for any legal defects found in the audit.

It is also desirable that the auditor have litigation skills, because the types of issues that an audit seeks to reveal and to treat will most likely be of relevance when litigation materializes, either in an infringement suit or in a suit arising out of a transaction — such as an acquisition or license — of the technology that is the subject of the audit. In addition, the auditors and all others involved in the audit should work to ensure that the results of the audit do not substantially assist any third party who may later challenge the rights that have been audited. Thus, all persons involved in the audit should be constantly sensitive to the preservation of the attorney-client and work product privileges.

Audit Plan

For most intellectual property audits of substantial scope, a written audit plan should be prepared in advance. The plan should define the areas of inquiry of the audit, the scope of the inquiry, the schedule, who has responsibility for each area, and the form of expected report. The plan should also define the documents to be reviewed and the personnel to be interviewed. The documents needed and personnel to be interviewed may not be known in fulsome detail in advance of the audit, and the plan may need to be revised after the audit is begun.

The plan provides a control document for the audit and serves as an important tool facilitating communication among all parties involved. Commercially available project planning software may be useful in preparing the plan and managing the audit. If possible, the parties to a technology acquisition transaction should discuss the need for an audit and prepare an audit plan during the preliminary rounds of negotiation, so that the results of the audit can be available well in advance of the final negotiations and before positions harden.

Initial Information Gathering

In virtually every case, substantial initial information will need to be gathered and presented before the auditors can efficiently begin their detailed investigation. The types of information that will be needed include:

1. *Information Concerning the Nature of the Property and Transaction to be Investigated.* It is often helpful for the auditors to be given a thorough demonstration of the technology and products to be audited. An overview of the history of the pertinent technology should be presented, preferably by one of the original developers, and the auditors should be given relevant product brochures, advertisements and release notes. Senior marketing, financial and legal personnel may have relevant background information. The auditors should also be fully informed of the details of any transaction for which the audit is being performed, and should be given relevant documents such as a letter of intent, terms sheet or draft purchase or license agreement.

2. *Background Research.* Some initial background research may be necessary before the audit begins. For example, there may be issues peculiar to the law of a particular state or country that must be explored. The technology at issue may be so complex that background research by the auditors will be necessary, particularly if patents are at stake or if there are questions of inventorship. Preliminary research before the audit begins may greatly increase its efficiency.

3. *Gathering of Documents.* Someone at the company should be designated to coordinate the gathering of documents and information relevant to the particular subject matter of the audit, and as many documents as possible should be gathered and, if necessary, copied before the audit begins. Depending upon the scope of the audit, relevant documents may include:

- License and maintenance agreements
- OEM and distribution agreements
- Government contracts
- Correspondence
- Federal registration and recordation documents (such as patents and copyright and trademark registration certificates)
- Federal registration application files (including all correspondence, filings and background documents relating to the application at issue)

- Uniform commercial code filings
- Employee agreements
- Consultant agreements
- Source code and object code
- Flow charts, technical specifications and other design documents
- Clean room affidavits and other documentation relating to clean room development
- Resumes
- Materials referred to during the development process
- Journal articles, published papers, and textbooks
- Notes of design meetings
- Competitive analysis documents
- Marketing files
- Logistics of Access

Because the audit team may need to investigate the history of a product, both active and archived files may have to be examined. Relevant documents may be located in regional or international offices of the company. Special means may be required to gain access to documentation stored on computer media. If the audit is to be conducted in secret, examination of documents may have to take place after hours or at special designated sites. Attention to these details is required well before the audit team arrives.

C. Written Report of Results of the Audit

If the circumstances are such that a written report will be privileged and not discoverable, the results of an intellectual property audit should normally be memorialized in a report. The report should discuss the development history of the technology at issue, describe and evaluate intellectual property defects uncovered in the audit, propose and describe specific remedial action that needs to be taken or that has been taken, and respond to any other specific need for information the parties commissioning the audit may have.

If the audit was conducted in the context of an acquisition transaction, the report should provide the information necessary to decide whether the rights available are the rights required by the acquiring party, and should provide a basis for valuing the rights to be acquired. Necessary remedial action can be implemented either before the transaction is consummated or after the acquisition (with appropriate adjustments in the purchase price to reflect the risks or cost of the cure).

D. Remedial Action

The audit may reveal the need for any of a number of forms of remedial action to cure deficiencies in intellectual property ownership or protection procedures:

Federal and State Filings

The audit may uncover areas of intellectual property that have not been protected by appropriate federal filings, which should be made promptly. For example, patent protection may be available for certain aspects of the technology at issue, and the costs and benefits of filing for such protection should be assessed. Copyright and trademark registration applications may need to be filed. Affidavits of continued use of trademarks may need to be filed, and payment of maintenance fees for issued patents may need to be made. Applications for renewal of copyright for works created before January 1, 1978 may need to be filed.

Recordation of transfers, exclusive licenses and other incidents of ownership may need to be filed with the appropriate federal and state offices. Security interests in intellectual property may not have been perfected properly, and the necessary state and federal filings may need to be done.

The audit may reveal the need to institute systematic procedures that ensure the appropriate federal filings are made as a matter of course in a timely manner as future products are created in which intellectual property rights may vest. A patent evaluation committee may need to be created to assess new technology for patentability and to decide in each instance whether patent applications should be filed based upon a cost/benefit analysis.

Ownership Issues

Defects in title to intellectual property may have to be cured. Assignments of ownership from consultants may need to be secured and recorded with the appropriate federal agencies. Alternatively, quitclaim deeds may be obtained from an alleged author or inventor. In some instances an employee may have developed an invention incorporated into a company product on his or her own time, and rights to the invention may need to be secured.

The audit may reveal deficiencies in license rights from third parties to make derivative works that incorporate elements of works owned by such third parties. Absent sufficient

license rights, there will be a cloud on the title of the derivative work the company has created.

The audit may reveal third parties who may be able to claim joint ownership with the company of the property and who, by virtue of such joint ownership, will be free to exploit the property themselves without the permission of the company. The joint owner's rights may need to be bought out. If the joint ownership concerns a copyright, the law will imply a duty of accounting of profits to the other joint owner from the exploitation of the joint work by the company. If the company does not desire to buy out the rights of the joint owner, a written agreement may be needed in which the joint owners agree that neither shall have a duty of accounting of profits to the other as a result of exploitation of the copyrighted work.

Potential defects discovered in patents may need to be remedied by additional disclosures to the patent office, requests for reexamination or reissue of a patent, amendments to pending applications, or a certificate of correction. Errors in copyright registration certificates may need to be corrected by filing supplementary copyright registrations. Errors in trademark applications may need to be similarly corrected.

The audit may reveal the need to cure omissions of copyright, trademark or patent notices. Systematic procedures may need to be set up to ensure that the proper proprietary rights notices — including notices required by the Federal Acquisition Regulations and the various supplements thereto to preserve rights vis a vis the federal government — are used in the future.

Infringement Issues

If the audit reveals potential infringement of third party rights, licenses may be sought or the product at issue may be redesigned, if possible, to "invent around" a patent that covers the product, to remove technology that may be the trade secret of another, or to eliminate substantial similarity to the copyrighted work of another.

If it appears likely from the audit that consummation of a proposed acquisition will precipitate a lawsuit, it may be possible to obtain a partial or complete indemnification from the present owner or a third party. Purchaser control of any potential lawsuit might also be sought during the negotiations.

The audit may reveal areas of particular risk in which a "clean room" development should be used to develop a new product or portion thereof. Alternatively, if clean room procedures were used and the audit reveals defects in such procedures, portions of the product may need to be redeveloped, or a detailed examination of the resulting product may need to be made to determine whether there is substantial similarity to the product of another. Missing or inadequate affidavits from the clean room participants may need to be remedied.

Other Issues

If the future value of a product depends heavily on retaining certain key personnel, some potential problems can be avoided by developing contractual or other incentives for such personnel to stay on. If the principals or key employees will not remain with the company after an acquisition, then consulting agreements, nondisclosure agreements or covenants not to compete (in states in which such covenants are enforceable) may lessen the severity of their departure. If there are important contracts preventing the assignment of key rights, it may be possible to secure the consent of all involved.

Prospective legal, marketing and R&D strategies can be designed to minimize the exposure from defects discovered in the audit. For instance, if an early version of a software product is in the public domain and cannot be copyrighted, future exposure may be reduced by immediately registering later versions. Key areas of technology for which patent protection might have been sought but was not can be bolstered by filing patents on improvements to such technology.

E. Illustration of Investigation of a Substantive Area

The remaining sections of this article provide a detailed illustration of the types of areas of inquiry that can and should be examined in the course of an intellectual property audit using copyrights and patents as examples. Copyrights have been selected for more detailed treatment as an illustrative example for the following reasons:

- The full range of the general types of areas of inquiry that might be the subject of an intellectual property audit — issues of ownership, recordation of transfers, perfection of security interests, compliance with statutory formalities, infringement of third party rights, and potential defenses to charges of infringement — can be readily illustrated using copyrights as an example.

- Copyrights have long been and continue to be one of the most important forms of intellectual property protection for software.

- The copyright case law is ripe with many important decisions in the last couple of years that increase the need for fulsome audits and affect the scope and types of issues that must be addressed in the audit.

A less detailed discussion of examination of patent rights in an intellectual property audit follows the discussion of copyrights. Because patents have become an increasingly important and common form of protection for software and other computer-related inventions, they should not be overlooked in an intellectual property audit.

III. AN ILLUSTRATION: AUDIT OF COPYRIGHTS

A. Ownership Issues: Background

One of the most important areas of investigation with respect to an audit of copyrights is that of ownership. The most fertile areas for potential problems occur when consultants have been involved in the creation, in whole or in part, of a company's product. Use of consultants is quite common in the computer industry. When a consultant is involved, at least three potential ownership problems arise:

- The consultant may own title to the work under the "work made for hire" doctrine.
- The consultant may be a joint owner of the work under rules of copyright joint authorship.
- The consultant may be able to exercise termination rights afforded by the copyright statute, enabling the consultant to terminate any transfer of title or license rights after approximately thirty-five years.

Each of these problems is discussed in a separate subsection below. There has been a great deal of important new case law in the last couple of years respecting copyright ownership issues. Because of its importance to intellectual property audits of copyright ownership issues, this case law is discussed at some length.

B. Ownership Issues: The Work Made for Hire Doctrine

The Concept of "Authorship"

Section 201 of Title 17 of the United States Code (the copyright statute) provides that copyright in a work of authorship vests initially in the "author" of the work. "Author" is a legal term of art:

- *Works Created by Individuals.* For works created by individuals not acting within the scope of employment of another or acting as a commissioned author,2 the individual is the "author" of the work and the owner of the copyright, which comes into existence automatically upon creation of the work.
- *Joint Works.* The authors of a joint work are co-owners of copyright in the work. Section 101 defines a "joint work" to be a "work prepared by two or more authors with the intention that their contributions be merged into inseparable or interdependent parts of a unitary whole." Any joint author may exploit the copyright in the joint work without permission of the other author(s), but absent an agreement otherwise, each author must account to the other author(s) for any profits derived from exploitation of the work.

- *Contributions to Collective Works*. Copyright in each separate contribution to a collective work is distinct from copyright in the collective work as a whole, and vests initially in the author of the contribution. In the absence of an express transfer of the copyright or of any rights under it, the owner of copyright in the collective work is presumed to have acquired only the privilege of reproducing and distributing the contribution as part of that particular collective work, any revision of that collective work, and any later collective work in the same series.

- *Works Made for Hire*. The "work made for hire" doctrine constitutes the major statutory exception to the fundamental principle that copyright ownership vests in the individual who writes a work. In the case of a "work made for hire" (defined in the next subsection), the employer or other person for whom the work was prepared is considered the "author", and therefore the copyright owner, of the work.

- Statutory Definition of "Work Made for Hire"

Section 101 contains a two-prong definition of a "work made for hire":

(1) a work prepared by an employee within the scope of his or her employment; or

(2) a work specially ordered or commissioned for use:

[a] as a contribution to a collective work,

[b] as a part of a motion picture or other audiovisual work,

[c] as a translation,

[d] as a supplementary work,

[e] as a compilation,

[f] as an instructional text,

[g] as a test,

[h] as answer material for a test, or

[i] as an atlas, if the parties expressly agree in a written instrument signed by them that the work shall be considered a work made for hire.

The Meaning of "Employee"

The United States Supreme Court, in *Community for Creative Non-Violence v. Reid*,[3] recently narrowed significantly the circumstances under which a third party not a regular, full-time employee can be considered an "employee" within the meaning of the first prong of the work made for hire definition.

Prior to the Supreme Court's decision in *CCNV v. Reid*, the lower federal courts had developed three distinct approaches to judging when a third party could qualify as an "employee" within the meaning of the first prong of the work made for hire definition:

- *The "Control" Test.* The most liberal approach to the work made for hire doctrine was developed by the Second Circuit, which adopted a rule under which even an independent consultant could be an "employee" within the meaning of the work made for hire definition if the independent consultant "were sufficiently supervised and directed by the hiring party".[4] Other courts adopting the Second Circuit's approach had applied the test in one of two ways. Some required that the hiring party have had only the *right* to control the day to day specifics of the creation of the work. Others required that the hiring party have *actually* exercised day to day control in the authoring of the work.

- *The Test of Common Law Agency.* The Fifth Circuit and the D.C. Circuit adopted an "agency" test, ruling that in order to qualify as an "employee" within the work made for hire doctrine, the party producing the work at issue must be an "employee" of the hiring party within the meaning of common law agency rules.[5] Under common law agency rules, the right to control the work of the hired party is one factor to be considered in establishing an agency relationship, but is not by itself determinative, as it was under the "control" test developed by the Second Circuit.

- *The Strict Literal Approach.* The Ninth Circuit adopted a strict literal approach, ruling that to qualify as a work made for hire, the party creating the work must be a formal, salaried employee (in the ordinary sense of the term) of the party requesting that the work be prepared. [6]

- *The CCNV Case*

3 490 U.S. —-, 104 L.Ed.2d 811, 109 S.Ct. 2166 (1989).

4 *Aldon Accessories, Ltd. v. Spiegel, Inc.*, 738 F.2d 548 (2d Cir.), *cert. denied*, 469 U.S. 982 (1984).

5 *See Community for Creative Non-Violence v. Reid*, 846 F.2d 1485 (D.C. Cir. 1988), *aff'd*, 490 U.S. —-, 104 L.Ed.2d 811, 109 S.Ct. 2166 (1989); *Easter Seal Society for Crippled Children and Adults of Louisiana, Inc. v. Playboy Enterprises*, 815 F.2d 323 (5th Cir. 1987), *cert. denied*, 485 U.S. 981 (1988).

6 *See Dumas v. Gommerman*, 865 F.2d 1093 (9th Cir. 1989).

In 1985, the Community for Creative Non-Violence (CCNV) entered into an oral agreement with Reid, a sculptor, to produce a statue dramatizing the plight of the homeless. After the completed work was delivered, the parties, whose agreement did not address copyright in the sculpture, filed competing copyright registration certificates. *CCNV* claimed copyright under the work made for hire doctrine.

The Supreme Court, noting the divergent split that had developed in the lower courts concerning the meaning of the two prong definition of work made for hire, concluded that general common law agency principles must be first applied to determine whether the work was prepared by an "employee" or independent consultant. If prepared by an "employee", then the first prong of the work made for hire definition governs, and the employer is deemed the "author" and copyright owner of the work. If under common law agency rules the hired party does not qualify as an employee, then the work can be a work made for hire if and only if it satisfies the requirements of the second prong of the definition. Thus, the Supreme Court concluded, contrary to the approach of some of the lower federal courts prior to *CCNV*, that the two prongs of the work made for hire definition are mutually exclusive.

The Supreme Court noted that the following factors are among those that are relevant under rules of common law agency in determining whether a hired party qualifies as an "employee", although the Court noted that this list of factors is not exhaustive, nor is any one factor determinative:

> [1] the hiring party's right to control the manner and means by which the work is accomplished;
>
> [2] the skill required;
>
> [3] the source of the instrumentalities and tools;
>
> [4] the location of the work;
>
> [5] the duration of the relationship between the parties;
>
> [6] whether the hiring party has the right to assign additional projects to the hired party;
>
> [7] the extent of the hired party's discretion over when and how long to work;
>
> [8] the method of payment;
>
> [9] the hired party's role in hiring and paying assistants;

[10] whether the work is part of the regular business of the hiring party;

[11] whether the hiring party is in business;

[12] the provision of employee benefits;

[13] the tax treatment of the hired party.

The Need for Written Assignments from Consultants

The *CCNV* case significantly narrows the circumstances under which a hired work will be deemed to be a "work made for hire". Most independent computer programmers and computer consultants will probably not fall within the definition of "employee" under common law agency rules. Moreover, software does not fit generally into any of the nine enumerated categories of the second prong of the definition of work made for hire. Although some programs prepared by independent consultants might be characterized as a "translation" (from one computer language to another, for example), as a "supplementary work' (such as an "add-in" program that works with another program), as part of an audiovisual work (when a consultant creates screen displays, for example), or as a collective work (when a consultant creates a segregable module, such as interface code that is distinct from the main "engine" code), many — indeed probably a majority — of computer programs prepared by independent consultants will probably not fall into the nine enumerated categories of the second prong of the definition.

The practical result is that most independent consultants will own the copyright in the work that they produce, absent a written agreement that transfers ownership of the copyright to the hiring party. Accordingly, it is crucial that written agreements assigning ownership of the work and all intellectual property rights therein to the hiring party be executed *before* commencement of any work on a project by an independent consultant.

An intellectual property audit of copyrights should ensure that such written agreements exist. If they do not, remedial action must be taken to secure them.

C. Ownership Issues: Joint Authorship

As noted earlier, section 101 of the copyright statute defines a "joint work" as a "work prepared by two or more authors with the intention that their contributions be merged into inseparable or interdependent parts of a unitary whole".

A majority view has developed in recent cases that in order to qualify as a "joint" author, one must contribute *copyrightable authorship* to the work, not merely ideas or other noncopyrightable contribution.

Recent Case Law

1. *Ashton-Tate Corp. v. Ross*. The case of *Ashton-Tate Corp. v. Ross*[7]. involved Ashton-Tate's spreadsheet product "Full Impact". In 1984 two programmers, Richard Ross and Randy Wigginton, decided to collaborate on the development of a computer spreadsheet program for the Apple Macintosh computer. Ross wrote the "engine", or computational portion of the product, and Wigginton wrote the "user interface" portion of the product. In the course of a "brainstorming" session between the two during development of the spreadsheet program, Ross gave Wigginton a handwritten list of user commands on a sheet of paper, organized into groups of subcommands, that he thought the program should contain.

In 1985, Ross and Wigginton began to disagree about how they would publish and market their new program, which the court refers to in its opinion as the "MacCalc prototype". Ross wanted to publish the product through his company, Bravo Technologies. Wigginton wanted to use a more established company, and approached Ashton-Tate.

When Ross found out that Wigginton had approached Ashton-Tate, the two had a falling out and decided to go their separate ways. Wigginton took his user interface code from the MacCalc prototype to Ashton-Tate, where it was combined with an engine already owned by Ashton-Tate known as "Alembic", to create the "Full Impact" product. Ross took his engine from the MacCalc prototype and wrote new user interface code for it to create a competing spreadsheet product which he marketed as "MacCalc".

On the eve of Ashton-Tate's commercial release of Full Impact, Ross asserted that he was entitled to compensation for his "contribution" to the Full Impact program. Ross asserted three bases for his claim:

> (1) That Ross' contribution of ideas and guidance for the user interface of the MacCalc prototype made him a joint author of the user interface of Full Impact;
>
> (2) That Ross' handwritten list of commands constituted copyrightable expression which, because it was incorporated into Full Impact, made Ross a joint author of Full Impact; and
>
> (3) That Ross became a joint author of Full Impact because Full Impact was a derivative work based upon the MacCalc prototype, of which he was a joint author.[8]

7 916 F.2d 516 (9th Cir. 1990).

8 The court's ruling with respect to this third argument is treated in the next subsection below. The court's rulings as to the first two arguments are discussed in this subsection.

In response to Ross' claims, Ashton-Tate brought an action for declaratory judgment against Ross to establish that Ashton-Tate owned all existing copyright interest in Full Impact and Ross was not entitled to any compensation from its marketing.

With respect to Ross' allegations of joint authorship, the Ninth Circuit confirmed and strengthened an earlier ruling (discussed in subsection 2 below) that in order to be a joint author of a work, one must contribute an independently copyrightable contribution. Accordingly, the court rejected Ross' first theory that he was a joint author of Full Impact merely by virtue of his contribution of guidance and ideas for the user interface of the MacCalc prototype, many of which were incorporated into Full Impact.

The court further affirmed the district court's ruling that Ross' handwritten list of commands did not constitute copyrightable authorship, and Ross could therefore not assert joint ownership of Full Impact on the basis that such commands were contained in Full Impact. The Ninth Circuit explicitly endorsed the district court's reasoning for its ruling, which was as follows:

"There is nothing innovative or novel about the labels that Ross proposed Wigginton use for the program or the order in which they are listed on the document. The single sheet of paper does not contain any source code. . . . Ross merely told Wigginton what tasks he believed the interface should allow the user to perform. This list of commands is only an idea that is not protected under federal law."[9]

2. *S.O.S. Inc. v. Payday Inc.* In the case of *S.O.S. Inc. v. Payday Inc.*,[10] the plaintiff claimed joint authorship of a computer program on the basis [of contributions to the design of the program in the form of specifying what tasks the program was to perform and how it was to sort data. The Ninth Circuit concluded, "A person who merely describes to an author what the commissioned work should do or look like is not a joint author for purposes of the Copyright Act. . . . To be an author, one must supply more than mere direction or ideas; one must 'translate an idea into a fixed, tangible expression entitled to copyright protection.'"[11]

3. *M.G.B. Homes, Inc. v. Ameron Homes.* In the case of *M.G.B. Homes, Inc. v. Ameron Homes*,[12] the Eleventh Circuit ruled that M.G.B. Homes did not become a joint author of architectural plans for a house merely because an employee of M.G.B. had provided a thumbnail sketch of the desired floor plan to be produced, had reviewed the drawings in progress, made suggestions and corrections, and had final approval authority over the work. The court concluded that the employee had contributed only noncopyrightable ideas, and such contribution was insufficient to make M.G.B. a co-author of the resulting plans.

9 728 F. Supp. at 602.

10 886 F.2d 1081 (9th Cir. 1989).

11 *Id.* at 1087.

12 903 F.2d 1486 (11th Cir. 1990).

4. *Childress v. Taylor. In Childress v. Taylor*,[13] the Second Circuit recently adopted the majority view set forth in the preceding cases that in order to qualify as a joint author of a work, one must contribute copyrightable expression to the work.[14] "It seems more consistent with the spirit of copyright law to oblige all joint authors to make copyrightable contributions, leaving those with non-copyrightable contributions to protect their rights through contract."[15]

Implications for the Intellectual Property Audit

If a consultant works with employees of the company to create a work of authorship, the consultant may well end up as a joint author of the work — and therefore a joint owner of the copyright — since the consultant's work and the work of the company's employees would usually be intended to be merged into interdependent parts of a unitary whole. Absent an agreement assigning the consultant's rights in the work to the company, the consultant would be free to exploit the copyright in the work without the permission of the company, subject only to a duty to account for profits, and, worse, would be entitled to an accounting of profits from the company for its exploitation of the work.

The intellectual property audit should inquire into whether any consultants worked with employees of the company in creating products of the company. If so, a written agreement assigning all ownership rights of the consultant to the company should be secured, if not already in place. If there is no written agreement in place, and the consultant is unfriendly, refuses to sign an agreement, or cannot be located, the audit should inquire into the precise contribution made by the consultant to determine whether an argument can be made that the consultant did not contribute copyrightable authorship to the work and is therefore not a joint author under the majority view exhibited in recent case law.

The Related Issue of Derivative Works Based on a Joint Work

An issue related to the issues of joint authorship just discussed concerns whether a joint author of one work can claim joint authorship — and joint ownership — of any derivative works based on the original joint work, regardless of whether the joint author has contributed any new copyrightable authorship to the joint work.

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13 945 F.2d 500 (2d Cir. 1991).

14 The case of *Fisher v. Klein*, 16 U.S.P.Q.2d 1795 (S.D.N.Y. 1990), represents the only recent contrary authority to the proposition that one must contribute copyrightable authorship to a work in order to become a joint author of the work. In this case, the court, without citing the Ninth Circuit's decision in S.O.S., reached a conclusion in apparent contradiction to S.O.S. The court ruled that suggested changes to the design of a piece of jewelry to make it lighter and more saleable constituted sufficient contribution to make the person suggesting the changes a joint author of the resulting jewelry, even though the suggesting party never contributed "hands-on" manipulation of the work, nor were the suggestions directed toward aesthetic goals. The court seems to have been heavily influenced, however, by the fact that the jewelry had been registered with the U.S. Copyright Office as a joint work listing the name of the suggesting party as an author. It is doubtful whether the holding of *Fisher v. Klein* on this point survives the Second Circuit's more recent decision in *Childress v. Taylor*.

15 945 F.2d at 507

In the *Ashton-Tate v. Ross* case, in ruling on Ross' theory that Ross automatically became a joint author of Full Impact because Full Impact was a derivative work based upon the MacCalc prototype (of which Ross was a joint author), the Ninth Circuit held that "[j]oint authorship in a prior work is insufficient to make one a joint author of a derivative work". The court concluded that, at most, Ross could assert a claim for an accounting of profits against *Wigginton*, his co-author of the MacCalc prototype, for exploitation of portions of the MacCalc prototype in Full Impact. Ross, however, could assert no copyright claim against *Ashton-Tate*, which rightfully owned the derivative work copyright in Full Impact since Full Impact was created as a derivative work with permission from Wigginton, a joint author of the underlying work on which Full Impact was based.

In *Weissmann v. Freeman*,[16] the Second Circuit had earlier reached the same result as the *Ashton-Tate* case in a plurality opinion. The reasoning of the plurality opinion, although not joined in all parts by one of the judges (and not joined at all by another judge who wrote a dissent), nevertheless persuaded the Ninth Circuit to rule as it did in *Ashton-Tate*.

In *Weissmann*, Weissmann and Freeman had jointly authored a syllabus used by medical residents to study for specialty board exams. Weissmann then created a derivative work based on the syllabus. Freeman later deleted Weissmann's name from the derivative work and distributed copies under his own name. Weissmann sued Freeman for copyright infringement, and Freeman defended on the ground that, as a joint author of the syllabus, he was automatically a joint author of the derivative work, even though he did not contribute to the derivative work.

The plurality opinion concluded that joint authorship of an earlier work does not make one a joint author of a derivative work based on the earlier work where one makes no contribution of copyrightable authorship to the derivative work. The court reasoned that a contrary holding "would convert all derivative works based upon jointly authored works into joint works, regardless of whether there had been any joint labor on the subsequent version. If such were the law, it would eviscerate the independent copyright protection that attaches to a derivative work that is wholly independent of the protection afforded the preexisting work."[17]

The concurring judge, however, stated that the fact that Freeman was not the author of any new material in the derivative work would not, of itself, preclude that derivative work from being 'joint", if Weissmann's intent when she wrote the derivative work had been that the work be "joint". Thus, the law in the Second Circuit on this point must be viewed as not entirely settled as of this date.

16 868 F.2d 1313 (2d Cir.), *cert. denied*, 110 S. Ct. 219 (1989).

17 868 F.2d at 1317.

Because the law is not entirely settled on the point in view of the foregoing cases, if derivative works are examined in an audit, the auditors should inquire into whether any predecessor versions of the work were jointly authored. If so, a written assignment should be obtained assigning all rights of the other joint authors to the company in all versions of the work, and disclaiming any rights in all versions of the work, including future versions.

D. Ownership Issues: Termination Rights

Under section 203 of the copyright statute, in the case of any work other than a work made for hire, the *exclusive or nonexclusive* grant of a *transfer or license* of copyright or any right under a copyright may be terminated by an author or his statutory successors within a five-year window beginning 35 years after the grant, or in the case of a grant covering rights of publication, 35 years from the date of publication, or 40 years from the date of execution of the grant, whichever is earlier. In the case of a grant executed by two or more authors of a joint work, termination of the grant may be effected by a majority of the authors who executed it (which may be only one).

Termination is effected by serving an advance notice of election to terminate not less than two or more than ten years before the effective date of termination. As a condition of its taking effect, a copy of the notice must be recorded in the U.S. Copyright Office before the effective date of termination.

Section 203(5) provides that termination rights may be exercised notwithstanding any agreement to the contrary, including an agreement to make any future grant.

In addition to the ownership problems previously discussed, termination rights pose an additional problem when using independent consultants, rather than employees, to create software or other works of authorship. If an independent consultant is used, the consultant may terminate transfer of the copyright or any license grants after 35 years. Because termination rights do not apply to works made for hire, the problem does not arise with respect to software written by employees.

The problem of termination rights is more complicated with respect to joint works. If an independent consultant has been used to create a joint work with employees of the company, the consultant will have a termination right after 35 years, but the company will not (since the company's interest in the work is as a work made for hire, for which termination rights do not apply). Conceivably, an independent consultant or the consultant's successors could terminate a grant of rights to the company and demand an accounting for any future profits derived by the company thereafter.

Section 203(b)(1) provides that a derivative work prepared under authority of the grant before its termination may continue to be utilized under the terms of the grant after its termination, but this privilege *does not extend to the preparation after the termination of*

other derivative works based upon the copyrighted work covered by the terminated grant. Thus, if an independent consultant prepares software and later exercises the termination right, the company might be unable to create new versions of the software or maintain existing versions.

Although the 35 year period at which the termination right becomes exercisable will be beyond the commercial life of much software or other works of authorship, some "core" technology — such as UNIX code, for example — could easily have a useful commercial life long enough to implicate the termination rights. In those cases, consideration of termination rights should be weighed in the decision whether to use independent consultants to create software or other important core technology. If consultants have been used in the development process, the report generated at the end of an intellectual property audit should point out the potential problem of termination rights so that the company can be prepared, if necessary, to deal with the possible exercise of such rights in the future.

To combat the problem of termination rights, the written agreement with the consultant could contain a clause granting the company a right of first refusal to obtain a further grant in the event the first grant is terminated. Conceivably, the agreement could also contain a covenant not to exercise termination rights. Although the copyright statute allows exercise of termination rights notwithstanding such a clause, the clause arguably would give rise to a breach of contract action in such event. There is a substantial chance, however, that a court would view such clause as circumventing the policies embodied in the termination provisions of the copyright statute and would refuse to allow a breach of contract claim to be based on such a clause. In view of these risks, insertion of such a clause may do nothing more than alert the independent consultant to the existence of rights of which the consultant might not otherwise have been aware.

Note that the same traps of ownership and termination rights can arise when incorporating into a company product code that has been licensed or purchased from another company if such code was not a work made for hire of such company and is therefore subject to termination rights of a third party individual programmer. Thus, if the company has licensed or purchased code from a third party for incorporation into a product, the audit should inquire into whether such code constitutes a work made for hire that is not subject to termination rights. If the licensed or purchased code is not a work made for hire, the company should be apprised of the possibility of termination rights.

To remedy the problem in future scenarios in which the company needs to acquire code that is not a work made for hire, the company should consider demanding a warranty from the entity supplying the code that no termination rights will arise within the term of the contract that will interfere with use of the acquired code, coupled with an indemnity against damages in the event of breach of the warranty.

E. Ownership Issues: Recordation of Transfers and Security Interests

There are a number of issues surrounding recordation of transfers and security interests in copyrights that should be the subject of inquiry in an intellectual property audit. Several of those issues are summarized in this section.

Exclusive Rights May Be Separately Transferred

Under section 106 of the copyright statute, the owner of a copyright in a work has the exclusive rights, among others, to reproduce the work, to prepare derivative works based upon the copyrighted work, and to distribute copies of the work to the public by sale or other transfer of ownership, or by rental, lease, or lending. Under section 201(d), any of the exclusive "bundle" of rights under the copyright may be "unbundled" and transferred and owned separately.

Requirement of a Writing

Section 204(a) provides that a transfer of copyright ownership, other than by operation of law, is not valid unless an instrument of conveyance, or a note or memorandum of the transfer, is in writing and signed by the owner of the rights conveyed or such owner's duly authorized agent. The requirement of a writing may be satisfied by the owner's later execution of a writing that confirms a prior oral agreement, at least where there is no evidence of any dispute between the parties as to the validity of the alleged oral grant.[18] Registration of copyright in a work by a transferee made prior to a valid transfer of ownership is invalid.[19]

Under section 101, a "transfer of copyright ownership" is defined to include an exclusive license, whether or not it is limited in time or place of effect. Thus, *exclusive licenses must be in writing in order to be valid.* Moreover, a lien on a copyright has been construed to constitute a "transfer" within the meaning of the copyright statute.[20] A lien holder is therefore subject to the copyright statute's priority provisions governing conflicting transfers[21] and not the priority provisions of the Uniform Commercial Code.[22]

Recordation of Transfers

Section 205 contains provisions for recording transfers of copyrights with the U.S. Copyright Office. Recordation will constitute *constructive notice* of the facts stated in the recordation only if:

18 *Wales Industrial Inc. v. Hasbro Bradley, Inc.*, 612 F. Supp. 510, 516 (S.D.N.Y. 1985).

19 *Id.*

20 *In re Peregrine Entertainment Ltd.*, 16 U.S.P.Q.2d 1017, 1025 (C.D. Cal. 1990).

21 The priority provisions of the copyright statute are discussed in detail below under the subsection titled "Priority Between Conflicting Transfers."

22 *In re Peregrine Entertainment Ltd.*, 16 U.S.P.Q.2d 1017, 1025 (C.D. Cal. 1990).

(i) the recorded document *specifically identifies* the work to which it pertains so that, after indexing by the Copyright Office, it would be revealed by a reasonable search of Office records; *and*

(ii) the copyright in the work has been registered with the Copyright Office.

Priority Between Conflicting Transfers

Under section 205(d), as between two conflicting transfers, the one executed first prevails if it is recorded in a manner that satisfies the constructive notice provisions, *within one month* after its execution in the United States (or within two months after its execution outside the United States), or at any time before recordation in such manner of the later transfer. Otherwise the later transfer prevails if:

- recorded first in a manner that satisfies the constructive notice provisions, and
- if taken in good faith, for valuable consideration or on the basis of a binding promise to pay royalties, and
- without notice of the earlier transfer.

The auditors in an intellectual property audit should therefore inquire into whether all transfers (including exclusive licenses) affecting a copyright of interest to the company have been properly recorded with the U.S. Copyright Office in a timely manner and in satisfaction of the constructive notice provisions.

Perfection of Security Interests in Copyrights

1. *The Peregrine Case*. A recent very important case, *In re Peregrine Entertainment Ltd.*,[23] changed the general practice for perfecting security interests in a copyright, ruling that in order to perfect a security interest in a copyright, the document granting the security interest must be recorded in the U.S. Copyright Office. The court concluded that the recordation provisions of the copyright statute preempt the provisions of the Uniform Commercial Code (UCC) with respect to copyrights. Accordingly, the court further concluded that the *filing of a UCC-1 financing statement does NOT perfect a security interest in a copyright AND ITS RELATED ACCOUNTS RECEIVABLE*.

In *Peregrine*, National Peregrine, Inc. (NPI) filed for reorganization under Chapter 11 of the federal bankruptcy laws as a debtor in possession. Its principal assets consisted of a library of copyrights and distribution rights to approximately 145 films. One of NPI's principal creditors, Capitol Federal Savings and Loan Association of Denver (Capitol), extended a six million dollar line of credit to NPI secured by a security interest in NPI's film library. Capitol

23 16 U.S.P.Q.2d 1017 (C.D. Cal. 1990).

attempted to perfect its security interest by filing a security agreement and a UCC-1 financing statement describing the collateral as "[a]ll inventory consisting of films and all accounts, contract rights, chattel paper, general intangibles, instruments, equipment, and documents related to such inventory, now owned or hereafter acquired by the Debtor". The security interest was not recorded with the Copyright Office.

The court concluded that, in order to perfect a security interest in a copyright and its related accounts receivable, a recordation must be made in the Copyright Office, rather than under the UCC, and that because Capitol had not recorded in the Copyright Office, its security interest in the copyrights of NPI's films and the receivables they had generated was unperfected. NPI was therefore entitled under bankruptcy law to avoid Capitol's interest and preserve the receivables generated by the copyrights for the benefit of the bankruptcy estate.

Note that an important difference exists between the priority provisions of the copyright statute and the priority provisions of Article 9 of the UCC. Unlike Article 9, the copyright statute priority provisions permit the effect of recording with the Copyright Office to relate back for one month (in the case of transfers executed in the U.S.) or two months (in the case of transfers executed outside the United States). Under section 9-312(5) of the UCC, by contrast, priority between holders of conflicting security interests in intangibles is generally determined by who perfected his or her interest first.

2. *Problems Raised by the Peregrine Case*. The *Peregrine* case raises a number of important problems that should be noted by those performing an intellectual property audit, particularly on behalf of a bank, venture capitalist or other entity contemplating lending money to a debtor owning valuable copyrights and wishing to perfect a security interest in such copyrights:[24]

- *Accounts receivable*. The *Peregrine* court ruled that a security interest in *accounts receivable* from a copyright is also not perfected unless the security interest in the copyright is recorded in the Copyright Office. Where security interests in copyrights have not been properly recorded with the Copyright Office, the auditor should inform the lender that the lender does not have a perfected security interest in any accounts receivable generated by the debtor's copyrights. In the event the security interest in a copyright is not properly recorded, it is unclear how a court will partition accounts receivable when such are attributable to both a copyright and other intellectual property rights such as a patent.

- Multiple recordations. Because the Copyright Office recordation provisions have no equivalent of the Article 9 "floating lien" in all assets of the borrower (including

24 For further detail on several of these problems, see Brinson & Radcliffe, "Security Interests in Copyright: The New Learning," 7 The Computer Lawyer 10 (Sept. 1990).

after-acquired assets), separate recordations must be made each time a new copyright comes into existence. This will necessitate a flood of recordations, for example, each time a new version of a computer program is created by a debtor, and the auditor should look to see whether all necessary recordations have been accomplished. "Due diligence" searches by the auditors in connection with a financing or acquisition may, for the same reason, produce a flood of documents. The auditors should also, on behalf of the lender, see that some mechanism is established to ensure that the debtor notifies the lender when new versions are created and that such new versions get registered and recorded with the Copyright Office.

- *Multiple registrations.* The priority provisions of the copyright statute require that the copyright be registered prior to the recordation in order to take priority. Thus, a concurrent flood of new registrations will be necessary to protect security interests in copyrights. Where multiple versions of a work such as a computer program are created and not all interim versions are registered with the Copyright Office, the auditor should inform a secured lender that it may not have the protection with respect to the unregistered part of the copyrighted work that it thought it had.

- *Delay.* The Copyright Office is very slow in both the registration and the recordation processes, which can each take six months or more to complete. Thus, the auditors should be aware that a due diligence search may not reveal any security interests submitted for recordation in the past six months or more. Similarly, a financing may need to be held up for a significant period of time while the copyrights are registered and a security interest recorded. This emphasizes the need to begin an intellectual property audit as early as possible in advance of the closing of a contemplated acquisition.

- *Statutory grace period.* Because the copyright statute allows a one month grace period in which to record in order to have the recordation relate back to the date of execution of the security interest, a lender could, unknown in advance, later find its interest subordinated to that of an earlier transferee who recorded after the lender but within the grace period. Auditors should be especially cognizant of this possibility when informing a lender of its status of superior rights.

- *Risk of loss of recordation priority.* The Copyright Office regulations require very specific things for a document to be recordable. For example, it must be either a signed original or a verified copy thereof, must specifically identify the work to which it relates (a general assignment document of all inventions or works produced is not sufficient), and if the document contains reference to an exhibit or other agreement and the exhibit or other agreement is not included, the document is not recordable. Thus, there is a good chance of making an error in the process,

causing the Copyright Office to deny the recordation, thereby missing the grace period and losing the recordation priority. If the audit reveals the need for recordations, great care should be taken to ensure that they are made correctly. The auditors should also inform the company of the potential pitfalls in the recordation process for future recordations the company will need to make as a matter of course.

- *Incomplete rules of priority.* The copyright statute's priority provisions are not exhaustive of all situations — they do not cover, for example, priority between two unrecorded security interests. Presumably, auditors will need to turn to the provisions of Article 9 to fill in the "cracks".

- *Different procedures for patents and trademarks.* Because the reported decisions have generally ruled that the patent and trademark statutes do *not* preempt the recordation provisions of the UCC,[25] different procedures may be followed to perfect security interests in patents and trademarks (and trade secrets — a right under state law) than for copyrights. Auditors must be aware that a single UCC-1 filing, often relied on in the past to cover all intangible assets, is no longer sufficient.[26]

- *Perfection of security interests in copyright licenses.* The Peregrine court did not explicitly address the issue of whether a security interest in a copyright license (as opposed to the copyright itself) must be recorded with the Copyright Office in order to be perfected. However, there are several reasons to suggest an affirmative answer. First, NPI's assets included exclusive distribution rights to several copyrighted films, in addition to ownership of copyrights in other films. The factual context in which the case was decided thus encompassed at least exclusive copyright license rights.

Second, because the copyright statute treats exclusive licenses as a *transfer* of part ownership in the copyright, and because transfers of copyrights are subject to the priority and recordation provisions of the copyright statute discussed above, it is reasonable to presume that the rationale underlying the *Peregrine* court's decision would apply at least to security interests in exclusive copyright licenses.

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25 *See City Bank & Trust Co. v. Otto Fabric, Inc.*, 83 Bankr. 780 (Bankr. D. Kan. 1988) (patents); *In re Transportation Design & Technology, Inc.*, 48 Bankr. 635 (Bankr. S.D. Cal. 1985) (patents); *Holt v. United States*, 13 UCC Rptr. 336 (D.D.C. 1973) (patents); *In re Roman Cleanser Co.*, 43 Bankr. 940 (Bankr. E.D. Mich. 1984), *aff'd mem.*, 802 F.2d 207 (6th Cir. 1986) (trademarks); *In re Chatanooga Choo Choo*, 98 Bankr. 792 (Bankr. E.D. Tenn. 1989) (trademarks); *In re TR-3 Industries*, 41 Bankr. 128 (Bankr. C.D. Cal. 1984) (trademarks).

26 For further analysis of the issues raised with respect to recordation of security interests in patents, trademarks and other intellectual property rights, see D. Hayes, "Perfecting Security Interests and Other Transfersectual Property Rights," Software Protection, May 1991, at 1.

The situation with respect to nonexclusive licenses is considerably less clear, however. The copyright statute treats a nonexclusive copyright license as *not* being a transfer of ownership in the underlying copyright, so one could argue that security interests in something that is not itself a property interest in the copyright should not be governed by the copyright statute.

Moreover, the copyright statute contains separate priority provisions that govern nonexclusive licenses. Section 205(e) provides:

A nonexclusive license, whether recorded or not, prevails over a conflicting transfer of copyright ownership if the license is evidenced by a written instrument signed by the owner of the rights licensed or such owner's duly authorized agent, and if —

(1) the license was taken before execution of the transfer; or

(2) the license was taken in good faith before recordation of the transfer and without notice of it.

Although this section contains explicit priority provisions for nonexclusive licenses, it does not make priority turn on recordation of the license, as do the priority provisions of section 205(d) governing "transfers". Because priority of the nonexclusive license itself (as opposed to a security interest therein) does not turn on recordation with the Copyright Office, one could argue that security interests therein should similarly not turn on a system of recordation with the Copyright Office.

On the other hand, one could argue that, because the recordation provisions of the copyright statute do encompass nonexclusive licenses (as a "document pertaining to a copyright"), the rationale underlying the *Peregrine* decision should apply to security interests in nonexclusive licenses as well, at least with respect to *perfection* of security interests therein. One could further argue that security interests in all forms of copyright licenses — exclusive and nonexclusive — should, for reasons of policy, be treated the same. There is, unfortunately, no case law on point at this time, and the conservative approach for auditors to follow is to record a security interest in a copyright license with both the Copyright Office and through the state UCC filing system.

F. Ownership Issues: Employee Agreements

In addition to obtaining written agreements from consultants, it is a good idea as a precautionary measure to have employees who will invent or produce works of authorship execute an employee agreement upon commencement of employment assigning ownership of all such inventions and works of authorship, and all intellectual property rights therein, to the company. These agreements can be particularly important in the event an employee does some work at home or after hours, as is often the case in the computer industry

nowadays, or produces work not within the scope of the employee's ordinary employment that may get incorporated into a product of the company (such work might not fall within the first prong of the work made for hire definition because outside the scope of employment).

Accordingly, auditors should inquire into whether such employee agreements exist, at least with respect to the key developers on a project and examine the language of such agreements for adequacy. If the language is inadequate, or the agreements do not exist, the auditors should inquire into whether any employees have done work at home or after hours, or have produced work not within the scope of the employee's ordinary employment, to which the company may not have clear title.

G. Ownership Issues: Summary

In view of the principles discussed in the preceding sections concerning ownership, transfers and recordation of copyrights, the auditors should inquire into whether the following steps have been taken by a company to obtain and perfect title to copyrights, and if not, remedial measures should be recommended:

1. All employees and consultants should be required to sign, before commencing any work, written agreements transferring ownership of all works of authorship produced by them, and all intellectual property rights therein. Such agreements should also contain clauses obligating the signatory to execute confirmatory assignment documents with respect to specific works of authorship that can be recorded with the Copyright Office.

2. The copyright in all works of authorship owned by the company and of significance to the company should be registered promptly with the U.S. Copyright Office for the following reasons:

- Registration is a prerequisite to filing a lawsuit for infringement of any copyrighted work whose "country of origin" (as defined in the copyright statute) is the United States.

- Registration is a prerequisite for the recordation of a transfer with respect to the work to be eligible to take priority over other transfers.

- A registration certificate constitutes prima facie evidence of the existence of a valid copyright in an infringement action — the defendant then bears the burden of proving that the copyright is not valid.

- No award of statutory damages (damages that a court may award in its discretion without proof of actual damages) or attorneys' fees can be made with respect to any infringement that commenced prior to registration of the work.

- Registration is required to cut off certain defenses of so-called "innocent infringers".

Section 412 of the copyright statute allows a three month grace period after first publication of a work in which to register to preserve all the copyright owner's rights. (Note, however, that if a security interest in the copyright is involved, registration of the copyright and recordation of the security interest must be accomplished within one month in order to preserve priority of the security interest.)

3. Confirmatory assignment documents specifically naming the copyrighted work by title, at least for those works produced by independent consultants, should be obtained immediately after completion of the work and should be recorded with the U.S. Copyright Office within one month after execution.

4. If independent consultants are used by a company, the company must be aware of the potential difficulty raised by termination rights, even if assignments of ownership are obtained. Careful records should be kept of what code the independent consultant created and what code, if any, employees created, so that in the event termination rights are exercised, the company can segregate the code its employees created and continue to exploit it. Similarly, if a company licenses or purchases title to code from another company for incorporation into a product, it should, if possible, make sure such code constitutes a work made for hire of the licensor/transferor that is not subject to termination rights.

5. Exclusive license agreements, which the copyright statute treats as a transfer of part ownership in the copyright, should be recorded with the U.S. Copyright Office within one month after execution.

6. Security interests in copyrights should be recorded with the U.S. Copyright Office within one month after execution.

H. Compliance with Statutory Formalities

Errors in the Registration Process

1. *The qad Case.* The recent case of *qad, inc. v. ALN Associates Inc.*[27] — in which a federal district court found it to be a misuse of the plaintiff's copyright to seek to enforce a copyright in a computer program in part because of the plaintiff's failure to disclose in its copyright registration applications that the program was a derivative work — makes it extremely important that all companies who have valuable copyrights reexamine carefully their copyright registration certificates to determine whether they might contain any errors of the sort that were involved in the court decision. This decision will no doubt encourage

27 19 U.S.P.Q.2d 1907 (N.D. Ill. 1991).

copyright defendants in future cases to attack the validity of the plaintiff's copyright registrations and to invoke the defense of copyright misuse based on errors that may be contained in such registrations.

In the *qad* case, the plaintiff brought an action against the defendant for infringement of the plaintiff's copyrights in its computer program known as "MFG/PRO." The plaintiff had registered its computer program as an original work, and had represented to the court that it was an original work. The court issued a preliminary injunction, based largely on expert testimony submitted by the plaintiff to the effect that a great many of the data fields and naming conventions were the same in the plaintiff's and the defendant's programs.

Upon a motion for summary judgment by the defendant, the court vacated the preliminary injunction and granted summary judgment for the defendant on the ground that the plaintiff had misused its copyrights. The court found that many of the elements of the plaintiff's program that the plaintiff alleged were copied by the defendant — such as data field structures and file and procedure naming conventions — were in fact copied by the plaintiff from an earlier computer program from Hewlett Packard known as the "HP250." The court ruled that it was a misuse of the plaintiff's copyright to assert ownership over such elements against the defendant, when in fact the plaintiff had copied such elements from another computer program and had failed to so inform either the court or the Copyright Office in the applications for copyright registration. Such misuse rendered the plaintiff's copyright unenforceable against the defendant.[28]

The court explicitly noted in its opinion that it was leaving open the question whether the mere failure to state on its copyright registrations that the MFG/PRO program was a derivative work of the HP250 was by itself a misuse or otherwise rendered such registrations —or the underlying copyright itself — invalid.[29] Rather, the court concluded that the misuse lay in the plaintiff's attempt to assert against the defendant ownership over the elements it had failed to disclose were copied from other sources.

2. *The Ashton-Tate v. Fox Case*. A second decision, although later vacated by the court, illustrates further the importance of searching for errors in copyright registration applications in the course of an intellectual property audit. In 1988, Ashton-Tate Corporation, original publisher of the "dBASE" line of personal computer database software products, filed a lawsuit against Fox Software, Inc. and The Santa Cruz Operation, Inc., alleging that the defendants' "FoxBASE" line of software products infringes Ashton-Tate's copyrights in its dBASE products.

28 The court noted that, under principles of the copyright misuse doctrine, it might be possible for qad to "purge itself of the copyright misuse and then defend its copyright in another cause of action," but that it was too late for qad to purge itself of the misuse vis a vis the defendant ALN. *Id.* at 1915 n.23. The plaintiff's copyright was therefore unenforceable against ALN.

29 *See id.* at 1911 n.14, 1915 & n.22.

On December 12, 1990, a district court in Los Angeles entered an order dismissing all of Ashton-Tate's claims against the defendants on the ground that Ashton-Tate, when it filed its original applications for copyright registration of the dBASE products, repeatedly failed to disclose to the United States Copyright Office that the dBASE line of computer programs was derived from "JPLDIS" (an early database computer program developed by the Jet Propulsion Laboratory and now in the public domain), and that dBASE III was derived from dBASE II.

Because the court found Ashton-Tate's failure to disclose such information to the Copyright Office to have been done knowingly and with an intent to deceive, the court ruled that Ashton-Tate's copyrights on its dBASE line of computer programs are *invalid*. The court reached its conclusion despite uncontradicted testimony in the case from Ashton-Tate's former in-house counsel who filed the copyright registrations at issue that any alleged errors in information contained in the copyright registration applications were made inadvertently and without an intent to deceive.

The court later vacated its decision without opinion, perhaps because the court's decision was unprecedented in copyright law, representing a draconian punishment — entire loss of copyright protection — for some seemingly innocent errors made in the copyright registration process.[30] Since the court vacated its decision, Borland International has acquired Ashton-Tate, and has agreed, pursuant to an agreement with the Department of Justice that allowed the acquisition to go through, that Borland will not assert copyright rights in the dBASE language itself.

3. *Implications for an Intellectual Property Audit.* The *qad* and *Ashton-Tate* decisions evidence a growing trend by the courts to take seriously errors or misrepresentations in the copyright registration process, particularly where such errors or misrepresentations have the effect of allowing a copyright claimant to assert copyright ownership over previously existing materials not created by such claimant. In view of these decisions, companies should take a very close look at their copyright registration certificates to determine whether any possible errors, omissions, or misrepresentations may have been made in the registration process, such as:

- Failure to list preexisting works or portions thereof upon which a registered work may have been based

30 The decision was made even more remarkable by the fact that Ashton-Tate's dBASE programs apparently did not incorporate any code from the JPLDIS program. Rather, some of the commands of the dBASE *language* upon which the dBASE products are based were allegedly derived from some commands in the early JPLDIS program. The court therefore concluded that, because some of the dBASE command "interface" was derived from JPLDIS (although not the code), Ashton-Tate should have registered the dBASE programs as derivative works based on JPLDIS, and that by failing to do so, Ashton-Tate had forfeited copyright protection. The court reached this conclusion in spite of the fact that Ashton-Tate had stated in the copyright registration applications that the nature of authorship claimed was the computer program "text" (or code), as opposed to the "entire work" (which would include the interface portions that were supposedly derivative of the JPLDIS program).

- Failure to list all authors of the registered work

- Failure to list earlier versions of the same work upon which the registered version may have been based

These decisions raise particularly difficult issues in deciding whether to identify a registered work on a copyright registration application as "derivative" of a preexisting "interface" — such as Microsoft "Windows" or IBM's Systems Application Architecture Common User Access interface (SAA CUA) — especially where the code of the registered program is entirely original.

Copyright Notices

In addition to compliance with the registration and recordation procedures already noted, the auditors should inquire into whether a proper copyright notice appeared on all publicly distributed copies of the work. Prior to March 1, 1989 — when the United States became a member of the international copyright treaty known as the Berne Convention — the copyright statute required that a copyright notice appear on all copies of the work publicly distributed under the authority of the copyright owner. Since the United States joined the Berne Convention, copyright notice is no longer required by the copyright statute, although its use is still strongly encouraged in order to cut off defenses of "innocent infringement".

For works distributed after January 1, 1978 (when the Copyright Act of 1976 took effect) and before March 1, 1989, omission of notice is not fatal to the copyright if notice was omitted from a relatively small number of copies, the distribution without notice was not authorized, or if certain cure provisions are undertaken. Under the Copyright Act of 1909, however, publication without copyright notice destroyed the copyright.

The auditors must determine, therefore, whether copies of a copyrighted work were distributed under authority of the owner without notice and, if so, when such copies were distributed. If such distribution was prior to January 1, 1978, the omission is fatal to the copyright. If after January 1, 1978 and before the Berne Convention took effect in the United States, the auditors must determine whether such lack of notice is excusable, perhaps because the distribution was not authorized by the copyright owner or because only relatively few copies were distributed without notice.[31] The auditor should also consider whether such failure to affix proper notice may still be cured by taking certain remedial action detailed in the statute.[32]

31 *See* 17 U.S.C. 405.

32 *See* 17 U.S.C. 405(b).

Other Statutory Formalities

Other statutory formalities that the auditors should inquire into include whether older copyright registrations (made prior to the Copyright Act of 1976 taking effect) may have required applications for renewal and payment of renewal fees to the Copyright Office to retain copyright protection beyond the initial term of 28 years provided for under the Copyright Act of 1909. In addition, if the copyrighted work or any portion thereof has been publicly distributed overseas, the auditors should consider the requirements of foreign copyright laws and international treaties.

I. Issues of Infringement: Rights of Third Parties

The auditors may need to look into whether the copyright rights of third parties may be infringed by any of the company's products. The following methodologies can be useful in examining this question:

Audit of the Development Process

With respect to each work in question, the auditors should interview the authors and determine whether any preexisting material was incorporated into the work and, if so, whether permission to use such material to create a derivative work was needed and obtained. The auditors should carefully examine all outside sources and persons that contributed to or were consulted in the creation of the work, such as third parties, customers, employees, consultants, textbooks, articles, other computer programs, documents and other materials.

A determination must be made in each instance whether source material that was consulted or contributed to the work is public domain material or owned by a third party. If owned by a third party, the terms pursuant to which such contributions were made must be analyzed to identify any parties who may have rights to the work or portions thereof. Particular inquiry should be made to determine whether any copyrightable material contributed by employees in fact belongs to a former employer.

Substantial Similarity Analysis

Where other works were consulted without permission, or in the event there is a high risk of claims of infringement from a particular third party, the auditors may need to conduct an analysis of substantial similarity between a company product and the product of a third party. For traditional types of works, such as books, the analysis is generally relatively straightforward.

In the case of computer programs, however, the analysis is much more difficult and sophisticated. In general, the computer programs at issue should be reviewed by auditors who are familiar not only with the copyright laws but with the relevant programming language, functions of the programs, and the hardware upon which they are designed to operate. Familiarity with the technical possibilities and limitations inherent in the computer

programs and the hardware on which they execute will allow the auditor to focus on or dispose of individual points of similarity as they are found.

The auditor may be substantially aided in the analysis of similarity by a computer program capable of methodically comparing either the source code or the object code instructions of the two programs at issue and reporting instances of similarity found. In the case of source code, the comparison is based on matches in the text of the source instructions themselves. In the case of object code, the comparison is based on matching patterns of binary digits (ones and zeros) in groups of a predetermined size using a criterion specifying how many bits within the group must match in order to record as a "hit". A binary comparison program of this type has been provided to the United States Custom Service by IBM, and it is believed that such program is routinely being used by Customs to determine whether imported computer programs may infringe the copyrights of IBM or others who have recorded their copyrights with U.S. Customs.

In some cases, particularly in the event that the company has not had access to the source code or object code of a third party's computer program, the analysis of substantial similarity may be restricted to consideration of the screen displays and other aspects of the user interface and the manner in which the programs operate.

J. Issues of Infringement: Clean Room Procedures

"Clean room" procedures are often used to reduce the risk that a new computer program will infringe the copyright rights of the owner of another program which the new program is designed to emulate, be compatible with, or otherwise function in conjunction with. Clean room procedures can be of crucial importance in the context of an intellectual property audit.

The Legal Theory Underlying Clean Room Procedures

Copyright law protects only the "expression" of ideas, and not ideas themselves. To establish a case of infringement, a plaintiff must prove ownership of a copyright and "copying" of copyrighted expression.

"Copying" may be proved by direct evidence, such as testimony from someone who witnessed direct copying. Because direct evidence of copying is seldom available, copying is usually proved through indirect, or circumstantial, evidence under a two part test: (i) proof that the defendant had "access" to the plaintiff's copyrighted work, and (ii) "substantial similarity" between the plaintiff's copyrighted work and the defendant's allegedly infringing work.[33]

33 *See, e.g., Whelan Assocs. v. Jaslow Dental Laboratory, Inc.*, 797 F.2d 1222, 1231-32 (3d Cir. 1986), *cert. denied*, 479 U.S. 1031 (1987).

The clean room procedure seeks to avoid infringement by ensuring that no "access" to copyrighted expression occurs during development. If one can prove no "access," then the first part of the "access plus substantial similarity" test will not be satisfied, and there should in theory be no finding of infringement, regardless of whether or not there is substantial similarity. In other words, where there has been no access, any substantial similarity is presumed to be the result of independent development, rather than the result of copying.

The clean room procedure is very fragile from a legal point of view. Most of the legal benefit of the clean room procedure is to eliminate the need to prove absence of substantial similarity as a result of proof of no access. If access to copyrightable expression is had by the program coders at *any point* in the process, then much of the legal benefit of the process will be instantly lost, for the access portion of the infringement test will be satisfied. Thus, careful legal review must be performed at every step of the procedure to ensure that the rules of the process are strictly followed and that the programmers have no access to copyrightable expression.

Although, in theory, if there is no access, there can be no infringement (even if substantial similarity is present), as a practical matter, a company must be concerned with substantial similarity even under a clean room procedure. If there is a high degree of substantial similarity, a court is going to be much more likely to infer that there must have been access to copyrighted expression.

Mechanics of the Clean Room Process

The clean room process requires review of various items by legal counsel throughout the entire process. One person at the company should be designated as the in-house clean room "supervisor" with the responsibility to oversee the clean room process and to ensure that all material requiring legal review is sent to legal counsel for that review.

The clean room process begins with the formation, at a minimum, of a "specifications group" of engineers and a "coding group". Members of the specifications group are the only persons who are permitted to have access of any kind to the computer program, called the "Target Software", that the software under development, called the "Compatible Software", is to emulate, be compatible with or otherwise function in conjunction with.

Members of the specifications group may review and analyze the Target Software and associated documentation to distill the ideas or functions therefrom and to prepare written technical specifications for the development of the Compatible Software. The written specifications should give a general functional description of the Compatible Software but must not suggest how the functions are to be implemented and must not give a description of the particular steps — even in broad outline form — that are to be taken to accomplish the functions.

The written technical specifications must be reviewed carefully by legal counsel before being given to the coding group to ensure that they do not contain protectable expression.

All members of the coding group should be persons who can certify through affidavit that they have never before disassembled, decompiled or otherwise translated into human-readable form the Target Software, or seen, read, examined or otherwise had access to, directly or indirectly, the Target Software. Separate written affidavits of continued non-access should be executed at periodic intervals thereafter throughout the clean room process, such as every three months.

The coders prepare the Compatible Software using only the written specifications from the specifications group and, in appropriate circumstances, publicly available documentation that has been pre-cleared for use by legal counsel.

Programming should preferably be conducted at a different site — and preferably in a different building — from the site where members of the specifications group are located. The coders should at no time in the development process have oral contact (even on an informal, social basis) with members of the specifications group. All communications between the coders and the specifications group must be only in writing.

During the development and debugging phases, questions from the coders concerning the technical specifications must be passed in writing to the specifications group through legal counsel. Legal counsel must approve each question for answering by the specifications group, and the answers must be screened by legal counsel for possible passing of copyrightable expression before the answers are passed back to the coders. A detailed logbook of all questions and answers, and legal counsel's decision as to whether each is accepted or rejected for passing between the two groups, should be kept. This legal review of questions and answers is especially important during the debugging phase, when the temptation is the greatest for the specifications group to look at the code of the Target Software to determine why a specific problem is happening and to suggest a specific solution.

The coders should keep meticulous records of the development process. The coders and the members of the specifications group should maintain daily laboratory notebooks, and all drafts, working papers, and interim versions of code should be saved in order to demonstrate independent development. All written communications between the coders and the specifications group should be saved.

Clean Room Procedures and the Intellectual Property Audit

Clean room procedures can be relevant to an intellectual property audit in a number of ways. First, the audit may reveal unacceptable similarity or other risks of infringement in a company product, and the company may elect to do a redevelopment of all or a portion of the product using clean room procedures.

Second, if clean room procedures were used in the development of a product that is the subject of the audit, the auditors must review all the details of the actual implementation of the process to determine whether at any point in the process there was "access". If so, as noted above, much of the legal benefit of the clean room procedures will be lost in the event of litigation, because errors in the clean room process may make the company unable to prove no access, causing the infringement analysis to revert back to that of substantial similarity.

To assess the integrity of the clean room process in detail is a laborious and expensive task. The auditors should in theory review literally every scrap of paper produced in the clean room process to determine whether copyrightable expression was at any point passed to the coders.

Because a strict clean room process is very tedious, time consuming and expensive, and because it typically produces great resistance among the engineers who are asked to follow it, it is often the case that a company is unable to follow the procedures throughout the entire process in pristine form. Where a company holds itself out as having followed a clean room development, it will be important that a prospective purchaser, licensee or investor conduct a thorough audit of the process actually followed to determine whether it is vulnerable to attack later in litigation, especially if the risk of infringement claims is high.

Of course, even a clean room process that sprang a few "leaks" along the way can still be of great benefit in producing a final product that is much more likely in fact to be not substantially similar to the Target Software. Nevertheless, a prospective purchaser, licensee or investor should for planning purposes and risk assessment understand through an audit the extent to which the process actually implemented is legally vulnerable.

K. Issues of Infringement: Potential Defenses

The final issues relating to infringement of relevance to the audit involve consideration of whether any rights in the work may have been forfeited or limited through any other action or inaction of the copyright owner. The most common concerns stem from the copyright doctrines of abandonment, estoppel and laches.

Copyright abandonment may occur when the copyright owner, through an overt act, indicates an intent to place copyrighted material in the public domain.[34] Abandonment makes the material available for all to use and generally cannot be retracted. Copyright estoppel occurs when a third party unknowingly undertakes infringing conduct with the copyright owner's knowledge and relies on actions or inactions of the copyright owner such that enforcement of the copyright by the copyright owner will unjustly injure the infringing defendant.[35] Unlike abandonment, estoppel generally applies to a specific party only, and

34 *See, e.g., Lopez v. Electrical Rebuilders, Inc.*, 416 F. Supp. 1133 (C.D. Cal. 1975).

35 *See, e.g., Lopez v. Electrical Rebuilders, Inc.*, 416 F. Supp. 1133 (C.D. Cal. 1975).

does not provide those who did not reasonably rely on the copyright owner's actions with any rights to the copyrighted work.

Copyright laches arises when a copyright owner, fully aware of an infringement claim, fails to bring it in a timely manner, allowing the infringer to expend substantial additional resources in pursuit of the infringing activity during the delay. In such case, the copyright owner may be denied a claim for damages where the infringer can show that recovery after an unreasonable delay by the copyright owner would unjustly prejudice the infringer.[36]

The auditors should determine whether any parties are known to be making use of the work in an unauthorized manner and, if so, whether any action has been taken which the other party could interpret as acquiescence in its activities. The significance of such unauthorized use to the company or to any party potentially acquiring rights in the affected work should be examined and possible remedial actions analyzed.

IV. AN ILLUSTRATION: AUDIT OF PATENTS

A. Introduction

In the last two or three years, patents have become an increasingly important form of intellectual property protection for software and other computer-related inventions. After many years of adherence to the view that software does not constitute patentable subject matter, the Patent Office has now begun to grant "software patents" in record numbers. There are several reasons that companies should consider seeking patents for software and other computer-related inventions:

- Patents are a much stronger monopoly than copyright or trade secret protection. Unlike a copyright or a trade secret, a patent prohibits reverse engineering and independent development of the protected invention.

- A patent can protect functional aspects of a work that are simply not within the scope of the subject matter of copyright.

- Patents are valuable for both "offensive" and "defensive" strategic reasons:

  (a) On the "offensive" side, a patent enables the patent owner to seek an injunction to prohibit others from making, using or selling the invention. The patent owner may also seek damages for past uses of the invention, and royalties for future uses.

36 *See, e.g., Lottie Joplin Thomas Trust v. Crown Publishers*, 456 F. Supp. 531 (S.D.N.Y. 1977), *aff'd*, 592 F.2d 651 (2d Cir. 1978).

(b) On the "defensive" side, a company with a strong patent portfolio may be able to work out a cross license arrangement with other patent holders, either as a settlement in the event of litigation, or to avoid litigation in the first instance. This will become an increasingly important advantage as the newly issued cadre of software patents are litigated during the 1990's.[37] Indeed, the widespread enforcement of many computer-related patents has already begun:

- In the last five years, IBM has actively sought royalties from the makers of IBM-compatible personal computers.

- In February 1991, AT&T sent demand letters to several companies concerning its "Pike" patent covering some fundamental software technology for producing and managing multiple windows on the screen.

- A patent held by the Hayes modem company covering a simple modem software "escape" sequence was asserted against all manufacturers of Hayes-compatible modems. Most manufacturers eventually took a license to the patent. Those who pursued the litigation were ultimately found infringing and tens of millions of dollars in damages were awarded.

- Texas Instruments has derived hundreds of millions of dollars in royalties during the last few years from its semiconductor patents.

Because of the increased importance of patents to the computer industry, companies should audit their patent position, both to ensure that the proper company procedures are in place to ferret out patentable inventions for which the company might desire to file patent applications, and to ensure that actions are not taken that could destroy possible patent rights before an application can be timely filed.

B. Potential Areas for Audit

Scope and Enforceability of Existing Patents

1. *Fundamental Requirements for a Patent.* Under United States law, in order to qualify for a patent, an invention must satisfy three fundamental requirements:

(i) It must be "novel" — meaning that it was not first invented or described in a printed publication by someone else before the invention was made by the patent applicant; or offered for sale or sold in the United States, or disclosed in a printed publication or used

37 The wave of new software patents has changed the fundamental premise on which the software industry has heretofore relied — that independent development is sufficient to avoid problems of infringement. As noted previously, independent development is not a defense to a claim of patent infringement. R. Duff Thompson, general counsel of WordPerfect Corp., was quoted in the Mar. 14, 1989 issue of the Wall Street Journal with this observation: "The playing field is now littered with explosive devices. You don't know they're there until you step on one."

publicly by the inventor, more than one year before the patent application was filed.

(ii) It must be "nonobvious" — meaning that a person of ordinary skill in the art at the time of the invention, given all relevant prior art that preceded the invention, would not have found the invention obvious to make.

(iii) It must be "useful." This requirement is generally not difficult to satisfy.

It may often be desirable to conduct an audit to determine the scope and enforceability of an existing patent or portfolio of patents. Such audit might be done, for example, to assess the validity or enforceability of a patent in the company's portfolio before bringing litigation on that patent, or to assess the validity or enforceability of a patent that the company is considering acquiring. Conversely, such audit might be done to determine whether a patent asserted against the company might be vulnerable to a defense of invalidity or unenforceability.

2. *Validity and Enforceability of a Patent.* Patents issued by the United States Patent Office are presumed valid. Any person challenging the validity of a patent bears the burden of proving that the patent is invalid. Defenses of invalidity or unenforceability are most often based on one of four grounds: anticipation (lack of novelty), obviousness, misuse, and fraud on the Patent Office.

- *Anticipation.* A review of published prior art, such as articles and patents, may be a relatively straightforward thing to do for many inventions to determine whether the invention is novel. A more common trap for destroying novelty is the on-sale bar, which renders a patent invalid if the claimed invention was offered for sale or sold more than one year before the date of the patent application. An audit should examine whether the patent owner or inventor has taken actions that might trigger the on-sale bar, such as an early announcement of a product or the indiscriminate use of beta testing as a marketing tool without nondisclosure obligations (as is all too common in the software industry).

Although the United States offers a one year "grace" period in which to file for a patent after offering an invention for sale, or publicly using or disclosing the invention, it is important to note that most foreign countries do not have such a "grace" period. In most foreign countries, sale or public disclosure of the invention destroys novelty and bars forever the possibility of filing for a patent. Thus, if a foreign patent is at stake, the audit should determine whether any such acts took place before the relevant date of filing of the patent application.

- *Obviousness.* Obviousness is usually proved by showing that all of the elements of an invention, plus an express or implied suggestion to combine them, are found in

the prior art. An issued patent is presumptively nonobvious as against all prior art references provided to the Patent Office by the applicant or cited by the Patent Office during the examination of the patent by the examiner. However, in certain circumstances, it may be appropriate to determine in an audit how well founded the Patent Office's determination of nonobviousness may be. Such an evaluation may be especially appropriate with regard to a software patent, as the Patent Office has historically had rather little classified prior art for this field, which is both relatively new as a mature technology and was for many years viewed as nonpatentable subject matter by the Patent Office — a fact that impeded the collation of the necessary prior art. It may also be desirable to undertake a more comprehensive prior art search to seek out material that the Patent Office may not have considered and that may render the invention obvious.

- *Misuse*. A patent may be rendered unenforceable against one or more defendants if the patent holder has misused it, generally by taking action that has the effect of extending the scope of the patent to cover nonpatented items — for example, by tying the sale of a patented article to the purchase of a nonpatented article. The audit should undertake to uncover practices in the exercise of the patent that may give rise to a claim of misuse. A straightforward and important area of examination is the license agreements pursuant to which the patented technology or device is licensed.

- *Inequitable Conduct*. A defense of inequitable conduct — often referred to as "fraud on the Patent Office" — arises when a patent applicant fails to satisfy its uncompromising duty required by law to reveal to the patent examiner all information which a reasonable examiner would likely consider material in deciding whether to allow a patent application.[38] Thus, a patent applicant and all others involved in preparing the application must reveal known potentially pertinent prior art, information relating to a possible on-sale bar, and other information that may affect whether or not the applicant is entitled to a patent. Failure to satisfy the duty to disclose material information may result in invalidity or unenforceability of the patent. The audit should therefore investigate whether there exist undisclosed prior art references known to the applicant, or acts such as beta disclosures or offers for sale that were not made known to the patent examiner during examination of the patent application.

- *Other Defenses*. The audit may inquire into whether other defenses to an assertion of a claim on a patent may exist, such as laches or estoppel. These defenses may arise, for example, from an undue delay in asserting a claim after learning of the

38 The rules governing the precise nature and scope of a patent applicant's duty to disclose are currently under review by the Patent Office and may change in the near future.

infringement, from a failure to pursue a claim after charging infringement, or from actions that may have invited infringement or evidenced an intent not to sue.

3. *Scope of a Patent.* It may be desirable to determine in an audit the scope of a patent. Scope may be assessed by examination of the claims of the patent, the "specification" that forms the explanation and disclosure of the invention, the prosecution history containing the correspondence and records of other communications between the Patent Office and the applicant, and the prior art references that were discussed by the Patent Office. It may be necessary to determine the scope of a patent to assess the likelihood of infringement of the patent in a litigation context, or to determine the business value of a patent that a company is considering filing an application for or purchasing from another — whether it could be easily "designed around" or whether it constitutes a fundamental "blocking" patent.

Compliance with Statutory Formalities

Although the statutory formalities attendant to the protection of patent rights are few, the audit should inquire into compliance in the following areas:

- *Marking of the Invention.* If the patent owner sells products embodying the invention, the patent number must be marked on the products; else the patent owner may not recover damages for acts of an infringer that took place before the infringer was actually charged with patent infringement.

- *Recordation of Assignments.* As in the case of copyrights and trademarks, assignments of patent rights, in order to be valid, must be in writing. Such assignments should be recorded promptly with the Patent Office or they will be void as against subsequent bona fide purchasers.

- *Maintenance Fees.* The United States, as well as some foreign countries, require the payment of periodic "maintenance fees" in order for a patent to remain in force. The audit should inquire into whether such fees have been timely paid.

- *Review and Institution of Corporate Procedures to Protect Patents*

One of the most useful functions an audit can serve with respect to patent rights is to provide a mechanism to review compliance with, and if necessary, to institute, corporate policies and procedures for the timely filing for and preservation of patent rights. As the previous discussion illustrates, patent rights are fragile, and can be lost by failure to make timely applications before certain events occur or within certain "grace" periods.

Company procedures for the protection of patents that should be reviewed or instituted by an audit include:

- *Written Invention Disclosure Documents*. The company should have a standard form written invention disclosure document that technical personnel use regularly to write up a fulsome description of a potentially patentable invention. Because United States law provides that only the first person to invent an invention is entitled to a patent thereon, documentary proof of the relevant dates of conception and reduction to practice of the invention is absolutely essential in the event of a contest of priority of invention.

- *Patent Evaluation Committee and Incentive Programs.* It is often useful to form a Patent Evaluation Committee that is charged with reviewing the written invention disclosure documents submitted to the company to determine which inventions merit filing for a patent in view of the company's business goals, budget, and the potential that the invention satisfies the fundamental requirements for a patent. The company may also wish to institute a patent incentive program, administered by the Patent Evaluation Committee or others, that provides rewards or other incentives to personnel for the written disclosure of an invention, and/or the filing or issuance of a patent thereon.

- *Rules for Employees*. Written rules and policies should be developed and implemented to teach and remind technical personnel of what types of subject matter might be patentable and the importance of patents to the company. In addition, both technical and marketing personnel should be taught and reminded of what acts can cause irretrievable loss of patent rights under the on-sale bar and other bar doctrines. Written rules and procedures should be developed that ensure patent applications are filed before disclosures, offers for sale, and other events (such as publication of a description of the invention in a scientific paper or conference proceeding) that may destroy patent rights take place. The audit can be used to develop such rules or to review the adequacy of and compliance with existing rules.

- Management of the Patent Portfolio. Written procedures should also be developed and reviewed in the course of an audit to ensure that maintenance fees are timely paid for those patents the company wishes to remain in force, and to ensure that assignments are recorded with the appropriate authorities and other statutory formalities (such as marking of products with the patent number) are complied with.

V. CONCLUSION

An intellectual property audit can provide an invaluable mechanism for companies owning intellectual property assets, companies desiring to acquire such assets from a third party, and creditors lending to technology-based companies to determine the ownership, scope and status of intellectual property rights. As intellectual property rights continue to grow in importance in the information age, intellectual property audits should become a more and more vital tool.