

The Software Industry as a Harbinger of Evolving Distribution Models

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It is a fact that copyright-based industries are in transition, and that the catalyst for this transition is technology – specifically the Internet and the opportunity to increase markets through more efficient distribution of works.

Some cast technology as the “heavy,” the “villain” in the current transition. I think this is wrong.

Although there are novel aspects to the current transition, technology has repeatedly been a catalyst for change. Software exists because of technology. As do motion pictures, printed books, sound recordings and video games.

In each instance of successful transition, two equally important adjustments have been necessary.

- First, commercial models for making works available have had to adapt.
- Second, the scope of legal protection authors receive has had to change.

Likewise, new balances have been necessary to account for the interest of authors, the entities that commercialize their works, and the public at large.

In my comments today, I will focus on the experience of the software industry, the transitions it has seen, and the changes now taking place.

I believe that many of the challenges confronted today by movies, music and books are challenges that have been at the center of the software industry for 25 years. Software is a class of works that has been digital from the outset. Thus, some of those experiences may both be harbingers of what is to come, as well as illustrations of what can be done.

In the balance of my remarks, when I refer to software, I am speaking of mass-market packaged or off-the-shelf business software products, rather than what is colloquially referred to as “industrial strength software,” or specialized products that are substantially customized to meet the needs of the customer.

Today, for some software products, like antivirus and security software, more than 80 percent is distributed on line. In a recent survey, the CEOs of major software companies predict that by 2005, two out of every three software products will be distributed on-line.

The description for this panel suggests three possible distribution model adjustments:

1. Free dissemination
2. Controlled dissemination and
3. Uncontrolled or *uncontrollable* copying and use

Let me note at the outset that I have serious reservations about the “uncontrollable” term. Technology, as I will describe in greater detail in a minute, is overtaking this concept of “uncontrollable” distribution.

Each of these models has been, and is being used today by the software industry. Thus, I suggest that asking which among these models is best is not the right approach. *Rather, I suggest the question should be how do right holders best mix and match the models depending on circumstances and marketplace conditions.*

Free distribution

Free distribution, often called “freeware” or “shareware,” has long been a part of software markets. Under this model, software is distributed with four objectives:

1. To persuade the user to try the product, and if he or she likes it, to pay a fee to the developer.
2. Alternatively, freeware or shareware may be used as a form of advertising to build customer recognition or acceptance.
3. Those products drive acceptance and sales of related products. Adobe’s Acrobat is one example as are media players from Real Networks and Microsoft.
4. Finally, individual authors of software, programmers, make software available as a way of adding to the state of the art or the base of public knowledge.

Elements of this “free” model are already visible in the movie, book and music industries. Book publishers often include a chapter from an author’s new novel at the end of a copy of a book. Motion picture and record companies are now including additional works as part of “enhanced” digital copies, such as outtakes from movies, different endings for movies, and entire performances of songs from an upcoming album. Many “free” songs or movies are now also being made available on-line, for similar purposes, by independent producers.

Uncontrolled distribution

Uncontrolled distribution is also an important aspect of the software industry. A very substantial portion of software is made available “in the clear,” free of copy or redistribution controls. There are three principal reasons:

- First, because the threat of piracy for certain types of products is low.

- Second, because customers have voiced substantial displeasure with controls. This is a key fact: software companies have had to repeatedly adjust the use of digital rights management (DRM) technology to accommodate marketplace responses. A good recent example of this is TurboTax, the most popular tax preparation program in the United States. The 2002 version of the products was distributed with copy controls. However, because of consumer resistance, the 2003 version will again be distributed without controls.
- Third, most often uncontrolled distribution is a result of the specific business model and customer base. Most software is licensed to business rather than individuals. Individual users represent as little as 15 percent of the software market. For the 85% that is business, software is licensed on a per seat or per user basis. For example, in the first year, the license may permit up to 100 users, or copies, to be made. At the end of the license term, an audit is conducted, and if the customer has made 300 copies, the licensing terms are adjusted accordingly.

Controlled distribution

Turning now to controlled distribution, there are again three reasons why software is made available with DRMs:

1. The most important and obvious one is to control piracy.
2. Companies also use DRM technologies to control unauthorized uses. Many companies make software available for a specified period of time. At the end of that time, the software stops functioning. The DRM in that instance is used to control uses in excess of those permitted by agreement between the parties. Pay-per-view is a movie industry example.
3. Finally, the software industry is developing a number of innovative new business models such as on-demand access through the Internet. One example is a company that needs online access to software for a specified amount of time each month to do its monthly payroll and tax accounting. In these instances, DRMs are used to permit access by only authorized persons for the agreed periods of times.

While the software industry has used a great many different types of DRMs over the past 20 years, including both copy controls and access controls, the current trend is to rely on access controls and less on tools to prevent copying.

In general, DRMs come in two basic varieties; unilateral and bilateral.

- Unilateral measures, where the DRM renders *a specific* copy unusable or inaccessible, without requiring a particular response from the hardware. A good example is so-called “cryptolopes”, where the copy can only be accessed through the application of key or decryption algorithm.
- And, bilateral measures, which rely on a particular response from the device. A good example is Macrovision as applied to videocassettes, or the “broadcast flag” now being considered in the United States for digital television broadcasting.

The software industry has used both unilateral and bilateral technologies.

A short list of the types of bilateral technologies includes:

Key (floppy) disk: where the software looks for a specific disk in the drive that contains a unique code that the software must recognize for the program to continue functioning.

Manual Protection: where software at specific intervals would ask the user to type in word or phrase contained in a printed manual.

Hardware Dongle: where the software at specific intervals looks for a device attached to the computer. The “dongle” contains a unique code that the software must recognize for the program to functioning.

Unilateral types of DRM’s that have been or are being used include:

Cryptography: where the Software is delivered in an encrypted format to the user. The encryption wrapper allows anyone to copy the program, but it will not operate unless properly decrypted with the correct decryption keys.

Registration codes: where a user must type in a unique series of numbers and letters the first time the software is used.

Product Activation: where, after installation, a “snapshot” is taken of the computer – the type of chip, size of the hard drive, etc, and associated with a unique activation code. The software will only run on a computer that matches the “snapshot.”

Uncontrollable dissemination and levies

In closing, let me say a few words about “uncontrollable” distribution and its corollary, levies. This is a topic that is very important to technology companies.

I believe that in the near term, technologies will be available to protect most forms of content distributed in digital form against illicit acts by the average user. There are limits, of course.

No technology is foolproof for all time.

Consumer acceptance will be a critical factor, as will be the business models chosen.

Finally, legacy analog products, and content now widely distributed in the clear, will continue to pose challenges.

But it is my sense that if a particular content owner wants to distribute his or her products with a DRM, an effective DRM for that particular product will be available.

Turning to levies. The core justification for levies is that authors need to be compensated for copying that cannot be practically prevented.

I think that this assumption is outdated and that levies are inconsistent with the balancing of interests inherent in copyright law.

At the core of all levy systems is an exception to author's rights, for private copying. Professor Ricketson, in a recent paper he wrote for the WIPO, points out that each instance of permitted exceptions or limitations in copyright law emanates from an underlying social contract: namely, advancing the public interest by providing strong rights to authors balanced by the legitimate and enduring goals of the public.

Examples of these specific case-by-case "social contract" limitations and exceptions are quotations, political speeches, teaching and news of the day. In each of these examples a specific public good is advanced.

Berne Article 9.2, TRIPS and the WIPO Internet Treaties recognize that a more flexible rule is needed as real world circumstances change over time.

But in both instances, these exceptions have been couched in the premise that the tradeoff was between society's needs and the author's rights.

I suggest that the concept of levies is a substantial departure from this basic structure. The underlying concept justifying levies does NOT advance a legitimate societal interest. Rather, it is a rough justice solution deemed acceptable for certain acts by individuals – acts that otherwise constitute a violation of authors' rights, which are fundamentally impossible to enforce, (or where enforcement requires unacceptable invasions of privacy).

Today, through the WIPO Internet Treaties, and the EU Copyright Directive, we have a new recognition that these rough justice solutions may be unfair. Thus, these laws create a nexus between compensation schemes and tools for enforcing rights such as DRMs, in an effort to reconcile levy systems with changed circumstances.

I believe the system now envisioned, of retaining levies based on the application of DRMs, is, *whether fair or unfair to authors*, simply unmanageable.

Let me explain. The basic concept is that levies are to be phased out as DRMs become more effective, or the rates for levies are to be adjusted based on the effectiveness of the DRM. This proposition raises a series of fundamental questions that cannot be easily answered:

- Who decides when the right balance has been reached between DRMs and levies? Courts? Legislators? Collecting societies? Administrators? Copyright holders? And based on what criteria?
- Are right holders required to use DRMs or is it a matter of choice?
- Who decides if the DRM is effective?
- What happens if the DRM is compromised? Does a levy snap back into place?
- How are rates for levies to be linked to DRMs?

As importantly, right holders may chose free or uncontrolled dissemination as their dissemination model, thus DRMs maybe irrelevant.

Also, because levy systems are based on the presumption that consumption of works occurs through reproductions, its underlying logic is diminishing

rapidly in importance. We already have ample evidence that for many persons *use* of works is becoming more important than owning or making copies of works.

The software industry has had 25 years of experience with DRMs, and no software company has ever asked to be made part of a levy system. Rather, the adjustments have been made through business models based on the mix of interest between authors and their consumers. I think this model has worked well, and it too is a harbinger of what is workable as we go forward.

One final point. Levies impose huge burdens on consumers, and fail to recognize that a vast majority of individuals do not make unauthorized copies. Still, each of them is forced to bear the burden.

A recent study has estimated that in just five European countries, consumers will be paying more than 1.5 billion Euros in levies each year by 2006. We think this will have a substantial negative impact on these economies and authors.

Today, we are at a decision point: either content providers embrace controlled distribution models and DRMs or they can expand levy systems to compensate for piracy – as some European collecting societies have recently suggested.

In part, this would legalize unauthorized P2P systems like Kazaa and Morpheus. This option, I believe, would substantially transform copyright from an author's right system into a series of compulsory licenses, where the author's "normal exploitation" – to use the terms of the Berne Convention – would be determined by neither the author nor the marketplace, but by third parties – regulators, administrators and elected and *unelected* officials.

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In summary, the software industry uses all of the distribution models identified in the program for this session. I believe this will remain true in the future. And as is already evident, other copyright-based industries are also likely to use all of these models in the coming years.