



Respecting and Protecting Intellectual Property in a Culture of Collaboration

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About the Authors

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Introduction

In the not-too-distant past, organizations centralized their knowledge as closely as they centralized authority and decision-making. In today's corporate and academic environments, however, collaboration has replaced centralization, not just in organizational structures and distributed decision-making but also as a primary path to innovation. Organizations today, whether they are for-profit companies seeking commercial leadership or academic institutions striving to further the world's knowledge, are actively leveraging their own capabilities through formal and informal partnerships and alliances.

Collaboration and cross-functional teams have replaced the traditional silo structure *within* the organization as well as outside. A recent study by Outsell, for example, noted that knowledge workers share more than 1 billion documents with colleagues on a weekly basis.¹ Whether internal or external to an organization, collaboration is driven by forces that include the accelerating specialization and convergence of scientific, technical and medical research, the complexity, competitiveness and faster life cycles of today's products and a more global commercial and intellectual environment.

Advancements in technology have greatly facilitated this collaboration, particularly since the advent of the Web in the mid-1990s. Whereas yesterday's inward-focused organizations concentrated data in centralized mainframe computers, today's collaborative organizations facilitate access and disperse knowledge and communication across globally distributed networks.

Collaboration presents great opportunities for today's organization to achieve innovation. At the same time, it requires that knowledge workers develop a more sophisticated understanding of the important issue of intellectual property (IP) use and reuse in our Internet-enabled culture. Knowledge workers must ensure that they honor the copyright of external IP and appropriately share and protect their own and their organization's intellectual assets while collaborating effectively. Emerging tools that seamlessly support copyright use and management within collaborative workflows can now be deployed at the desk- and bench-top levels and should be an important component of a corporate IP strategy.

Innovation Demands Collaboration

Organizations have embraced collaboration because it has become a key tool for producing innovation, as noted recently in *McKinsey Quarterly*:

"... knowledge [as opposed to information] tends to reside in individuals and is very context specific. You need close relationships with diverse sets of people and institutions when you want to create new knowledge jointly and deliver innovations to the market."²

¹ Outsell, Inc. TrendAlert: The global copyright infringement pandemic—A first-aid kit for enterprise information management functions. I-Market Hot Topics, July 29, 2005, Vol. 1.

² John Seely Brown and John Hagel III. Creation Nets: Getting the most from open innovation. The McKinsey Quarterly, 2006, No. 2 <www.mckinseyquarterly.com/article_abstract.aspx?ar=1766&L2=21&L3=35>.

The need for greater collaboration stems from a number of factors related to faster innovation:

- **Increased Specialization and Complexity of Scientific, Technical and Medical Research**

As research has become increasingly specialized, researchers in laboratories across the globe share findings in order to achieve faster results; large pharmaceutical companies now routinely outsource the development of new chemical entities; industry provides grants to universities that now share in the successful commercialization of their research, and so on.

- **Increased Urgency for Medical Treatments**

Today, disease-specific funding foundations, such as the Juvenile Diabetes Research Foundation, Fox Foundation for Parkinson's Research and the Myelin Repair Foundation, require scientists to disclose discoveries immediately and collaborate with others to accelerate treatments.³ The threat of global epidemics has further spurred collaboration among scientific, commercial and government organizations for the development and distribution of medications.

- **Convergence of Disparate Research Areas in Application Solutions**

Whether it is a new plasma television or a new test for diabetics, today's products often utilize state-of-the-art knowledge from disparate fields—biology, physics, chemistry, materials science, and others. The following description of research on utilizing heating of magnetic nanoparticles to eliminate tumors is an example of work that requires collaboration among cell biologists, oncology researchers, clinical cancer specialists and materials science engineers to carry it from concept to release.

“Magnetic nanoparticles are promising tools for the minimal invasive elimination of small tumors in the breast using magnetically-induced heating. The approach complies with the increasing demand for breast conserving therapies and has the advantage of offering a selective and refined tuning of the degree of energy deposition allowing an adequate temperature control at the target. The biophysical basis of the approach, the magnetic and structural properties of magnetic nanoparticles are reviewed. Results with model targets and in vivo experiments in laboratory animals are reported.”⁴

- **Increased Development Costs and Faster Life Cycles**

Organizations are seeking more partnerships and collaboration because the cost of product development in many areas has grown at the same time that typical product life cycles have decreased. In the pharmaceutical industry, for example, Tufts Center for the Study of Drug Development found that it typically costs \$802 million and takes 10 to 15 years (2001 data) to develop and bring to market a new prescription medicine.⁵ Collaboration helps companies decrease cost, spread their risk and bring products to market more quickly, thus speeding and increasing their return on investment.

³ Sharon Begley. Anxious for cures, grant givers turn more demanding: To speed discovery process, scientists must share data as condition for funding. The Wall Street Journal, September 29, 2004, <<http://online.wsj.com/article/SB109639542832130226.html>>.

⁴ I. Hilger, R. Hergt, and W.A. Kaiser. Use of magnetic nanoparticle heating in the treatment of breast cancer. IEE Proc Nanobiotechnol. Institute for Diagnostic and Interventional Radiology, Friedrich-Schiller-University Hospital Jena, D-07740 Jena, Germany. February 2005. Vol.152, No. 1, pp. 33-39.

⁵ Tufts Center for the Study of Drug Development. Backgrounder: How new drugs move through the development and approval process. November 1, 2001 <<http://155.212.10.127/NewsEvents/RecentNews.asp?newsid=4>>.



Technology Facilitates Collaboration

Collaboration to accelerate innovation has in turn been accelerated by developments in technology that have enabled communication and content sharing within and among organizations.

Content-Sharing Tools

Since the early days of the World Wide Web, applications for knowledge workers have evolved from “bring it to my desktop” tools like FTP and Gopher to robust collaboration tools, such as blogs, Wikis, RSS and podcasts. Collaboration has even worked its way into the intellectual approach to categorizing and authenticating knowledge through the development of folksonomies and tags as alternatives to traditional structured ontologies.⁶

Collaboration tools are not mere grassroots initiatives. Microsoft’s 2005 acquisition of Groove Networks,⁷ with its “virtual office” collaboration software, and the hiring of Groove CEO Ray Ozzie as chief technical officer at Microsoft show that collaboration tools will be a key component of future releases.

Digitized Content

The digitization of organizational content repositories has also enabled greater collaboration. Publishers have digitized much of the world’s published knowledge. Google is working with major academic libraries to digitize their collections.⁸ Commercial organizations have created their own repositories and knowledge management systems in order to capture and share knowledge more effectively.

Virtual Libraries

Large corporations have invested millions of dollars to create virtual libraries providing employees with unbridled access to internal and external IP. These libraries are staffed with a new breed of information managers highly skilled in technology, digitized content and database management. These investments in both staff and technological resources speed knowledge transfer within an organization and ultimately bring products to market faster.

⁶ Clay Shirky. Ontology is overrated: Categories, links, and tags. Shirky’s Writings About the Internet <www.shirky.com/writings/ontology_overrated.html>.

⁷ Microsoft. Groove Networks to combine forces to create anytime, anywhere collaboration. Microsoft, Presspass—Information for Journalists, March 10, 2005 <www.microsoft.com/presspass/features/2005/mar05/03-10GrooveQA.mspx>.

⁸ About Google Scholar <<http://scholar.google.com/scholar/about.html#faq>>.



Technology-Enabled Collaboration Requires New IP Strategy and Skills

The need for faster and greater innovation is clearly leading us into a new “Culture of Collaboration.” Technology has provided the tools and the digital content that can make us effective collaborators. The convergence of these forces offers great promise, and the results are all around us: technology has unleashed content creation and distribution. A recent survey by the Pew Internet and American Life Project found that 57 percent of online teens create content for the Internet.⁹ It is likely that the full effects of technology-enabled collaboration will be seen only in the coming decades, when the generations of children brought up with mobile devices and a file-sharing mind-set become the knowledge workers and leaders of corporate and academic organizations.

Effective collaboration requires a host of new individual and organizational skills and behaviors. While many are being addressed, the highly important area of intellectual property has evolved slowly from print-based models. As Larry Downes, associate dean of the UC-Berkeley School of Information Management Systems, stated in his column “Why Johnny Can’t Stop Sharing Files,”

“... the copyright system designed in the 18th century simply doesn’t work in the era of open standards, high-speed and low-cost data communications, and ever-cheaper and more powerful devices to store, transmit and play digital content. It’s intellectual-property law versus Moore’s Law.”¹⁰

Today’s knowledge workers need to develop new understandings of effective IP management to protect their organizations’ intellectual assets, to avoid liabilities for their organizations by violating the IP rights of others and to participate responsibly and effectively in the culture of collaboration. In our work in the knowledge creation and distribution industries, with publishers, professional societies, large commercial R&D-driven companies, academic institutions and software developers, we have noted several key factors that can enhance collaborative IP management:

1. Leadership Commitment to IP as a Strategic Asset

Today as never before, corporate and other institutional leadership is taking a hand in ensuring that IP management is front and center in their strategies, as a recent article in *LabOnline* suggests:

“Protecting IP should not therefore be seen as a specialized function better left to IP specialists such as patent attorneys and copyright experts. Instead, it should be seen as an important element of corporate strategy.”¹¹

⁹ Pew Internet and American Life Project. Teen content creators and consumers. November 2, 2005 <http://www.pewinternet.org/pdfs/PIP_Teens_Content_Creation.pdf>.

¹⁰ Larry Downes. Why Johnny can’t stop sharing files. CIOInsight, January 6, 2006 <www.cioinsight.com/article2/0,1540,1913768,00.asp>.

¹¹ Puay Tang and Jordi Molas-Gallart. Protecting intellectual property in collaborative environments. *LabOnline*, November 2005 <www.labonline.com.au/science/feature_article/item_112005a.asp>.

In the past, IP management was often left to library or information technology (IT) functions. Today, it should be elevated to the executive level. IP assets are a key component of competitive advantage, and leaders need to express and model their organization's value of intellectual property as a core strategic asset. Organizations should develop explicit IP management strategies just as they develop human resource strategies to protect their human assets, addressing questions such as:

- How can we equip workers to respect external and licensed IP?
- How do we develop best practices in IP and copyright management?
- What is the strategic and competitive value of IP for our organization?
- Who has responsibility for IP management? Who establishes and reinforces standards and ethical codes for respecting external IP and for copyright compliance?
- What are the ways in which we generate original IP?
- How do we store and safeguard IP?
- How do we protect IP in our contracts? How do we deal with collaborative IP creation?
- How do we measure and monitor IP use and value?

2. IP and Copyright Management Education Initiatives

Most organizations offer extensive training programs on using technology tools to collaborate. Many offer training in collaboration skills, such as negotiating and influencing. Few offer formal training on managing the valuable IP that is the core content. Like leadership commitment, education is essential to effective IP management. Employees must understand the strategic value of IP, the importance of safeguarding IP, the proper uses of internal and external IP and issues of collaborative IP creation. They also need to know and understand how to use the tools of IP management.

In a recent column, Caroline Horton Rockafellow suggested that it is time to take IP management mainstream in the nation's business schools:

“Not only must the corporate world take a new look at the management of intellectual property, but our nation's business schools should be encouraged to move this course of study from the world of electives to the mainstream of study. Once intellectual property management becomes mainstream, we should begin to see significant increase in the exploitation and valuation of this most critical asset.”¹²

3. Organizational Deployment of IP Management Tools

Finally, education needs to be supplemented by effective tools to do the job. IP and copyright management within collaborative work environments is no longer a function that can be relegated to a centralized department, such as the library or IT. Increasingly, IP management will need to be distributed to user desktops and integrated into workflows. The more barriers that knowledge workers encounter managing IP properly and respecting the IP and copyrights of authors, publishers and other organizations, the less likely they are to do so. Evolving information standards and new rights management tools can play a significant role in helping knowledge workers to do the right thing and to do it effectively and efficiently.

¹² Rockafellow, Caroline Horton, IP management education: Is it time to take it mainstream? IPFrontline.com: Magazine of Intellectual Property and Technology, November 28, 2005, <<http://www.cafazine.com/printtemplate.asp?id=7494>>.



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