



*The Small Business & Entrepreneurship Council's
21st Century Small Business Policy Series*

*Analysis #24
February 2006*

Innovation and Intellectual Property: The Economics and the History

by Raymond J. Keating
Chief Economist
Small Business & Entrepreneurship Council

Small Business & Entrepreneurship Council
1920 L Street • Suite 200 • Washington, D.C. 20036
Telephone: 202-785-0238 • Fax: 202-822-8118
Website: www.sbecouncil.org

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Property rights have long been recognized as a critical building block of economic development. Oddly, though, at this point in time when intellectual property, or IP, has arguably become more important for economic growth than ever before, this fundamental lesson of economics and history sometimes seems to be forgotten.

Dispute exists over the extent to which IP should be protected. Indeed, some go so far as to argue for no IP protections whatsoever – that such protections are either unnecessary or unworkable in the twenty-first-century digital economy.

In reality, economic reasoning and history support the common sense notion that intellectual property warrants rigorous protections.

What Are We Talking About?

Let's first be clear about our subject matter. Private property rights provide the property owner with the rights to the use of that property (that is, possession, use and control); to legal protection against those who would invade or infringe upon that property without the owner's permission; and to trade or transfer that property.¹

Through copyrights and patents, legal protections are extended to the intellectual property of individuals and businesses, including inventions, innovations, new products and procedures, software, books, music, and so on.

But some criticize patents and/or copyrights, arguing that ideas cannot be owned. In his book *The Fire of Invention: Civil Society and the Future of the Corporation*, philosopher Michael Novak countered such notions with the correct formulation of what copyright and patents actually accomplish. Novak pointed out that

“...patent and copyright laws do not protect ideas or concepts, considered in their immateriality and shareability. On the contrary, copyright laws protect the concrete expression of ideas, their incarnation in the precise particulars of language and song singled out by their creators. Similarly, patent laws protect the concrete reduction to physical practice of practical insights. In both cases, it is not the general idea that is protected but the concrete incarnation... [A] *patent* covers a practical insight reduced to practice – that is the trick of the thing, the hard part – and a copyright covers the unique, personal way of presenting something by a writer or an artist.”²

The Economics

What then are the economic arguments supporting property rights protection in general, and how do those arguments address or relate to intellectual property? To answer this, let's turn to some of some of the most formidable and important economic thinkers over time.

Adam Smith, the father of modern-day economics, noted in 1776 that industry developed and prosperity flourished in towns because of the protections offered for private property. Smith explained:

“Order and good government, and along with them liberty and security of individuals, were, in this manner, established in cities, at a time when the occupiers of land in the country were exposed to every sort of violence. But men in this defenceless state naturally content themselves with their necessary subsistence; because to acquire more might only tempt the injustice of their oppressors. On the contrary, when they are secure of enjoying the fruits of their industry, they naturally exert it to better their condition and to acquire not only the necessaries, but the conveniences and elegancies of life.”³

It's easy to see how this phenomenon extends to intellectual property today. For example, why invest the time and resources in an invention if anyone can come along and copy that invention due to a lack of patent protection? Or why be involved in writing, performing and producing music, if online thieves are free to steal it?

French economist Jean-Baptiste Say boldly declared the importance of property rights in the early 19th century: “Political economy recognises the right of property solely as the most powerful of all encouragements to the multiplication of wealth.”⁴ On protecting private property, Say wrote:

“Without this protection of each individual by the united force of the whole community, it is impossible to conceive any considerable development of the productive powers of man, of land and of capital; or even to conceive the existence of capital at all; for it is nothing more than accumulated value, operating under the safeguard of authority.”⁵

Note here – whether one likes it or not – the necessary role of the government. And again, reflecting on Say's points, can one really conceive of development occurring to its fullest extent in the twenty-first century without the full protection of intellectual property?

In his *Human Action*, originally published in 1949, economist Ludwig von Mises wrote on the importance of copyright and patent protections:

“But it is obvious that handing down knowledge to the rising generation and familiarizing the acting individuals with the amount of knowledge they need for realization of their plans require textbooks, manuals, handbooks, and other nonfiction works. It is unlikely that people would undertake the laborious task of

writing such publications if everyone were free to reproduce them. This is still more manifest in the field of technological invention and discovery. The extensive experimentation necessary for such achievements is often very expensive. It is very probable that technological progress would be seriously retarded if, for the inventor and for those who defray the expenses incurred by his experimentation, the results obtained were nothing but external economies.”⁶

Along similar lines, Milton Friedman, the Nobel Prize winning economist, pointed to the importance of rewarding creators in his 1962 book *Capitalism and Freedom*. Friedman wrote:

“In both patents and copyrights, there is clearly a strong prima facie case for establishing property rights. Unless this is done, the inventor will find it difficult or impossible to collect a payment for the contribution his invention makes to output. He will, that is, confer benefits on others for which he cannot be compensated. Hence he will have no incentive to devote the time and effort required to produce the invention. Similar considerations apply to the writer.”⁷

In his book *Applied Economics: Thinking Beyond Stage One*, Thomas Sowell explains how property rights affect everyone throughout the economy, including small entrepreneurs in need of capital. Sowell noted “the role of property rights as a key link in a chain of events that enable people without property to generate wealth for themselves and the whole society.”⁸

To make his point, Sowell focused on woes illustrated in some Third World nations that do not vigorously protect property. He continued:

“In short, although property rights are often thought of as things that are important primarily to the affluent and the rich, these legal recognitions of existing assets may be especially needed by poor individuals in poor countries, if they do not wish to continue to be poor. Millions of Third World people have already demonstrated their ability to create, in the aggregate, vast amounts of wealth, even if their tangled legal systems have not yet demonstrated an ability to let that wealth readily become property that can be used for further expansion and development... [W]hat property rights provide, in countries where these rights are readily accessible, is the ability of people to convert physical assets into financial assets, which in turn enables them to create additional wealth, whether individually or in combination with others.”⁹

Sowell summed up: “In short, property rights are an integral part of a price-coordinated economy, without which that economy cannot function as efficiently. This in turn means that its people in general – not just property owners – cannot prosper as much as if it did operate more efficiently.”¹⁰

Sowell’s case certainly can be made for intellectual property as well. The legal recognition and protection of intellectual assets allow for greater efficiency, development and growth.

Michael Novak ably summed up the economic logic of protecting intellectual property:

“Regimes without patents penalize inventors and reward freeloaders. Patent regimes recognize the right of inventors and authors to the fruits of their own labors as a right in common law. They do so because the right serves the common good by stimulating useful inventions and creative works from which a grateful public benefits. Far from protecting private interests at the expense of the common good, patent protection advances the common good by means of private interests.”¹¹

But what about the argument – again sometimes even put forward by some advocates of free markets – that copyrights and patents are government-created monopolies, and therefore amount to unwarranted government interference in the marketplace? Well, Milton Friedman noted that

“...the grant of patents to inventors and copyrights to authors ... are different, because they can equally be regarded as defining property rights. In a literal sense, if I have a property right to a particular piece of land, I can be said to have a monopoly with respect to that piece of land defined and enforced by the government. With respect to inventions and publications, the problem is whether it is desirable to establish an analogous property right. The problem is part of the general need to use government to establish what shall and what shall not be regarded as property.”¹²

Novak labeled the widely accepted concept of copyright and patents being government-granted “temporary monopolies” as “a terminological mistake.”¹³ He went on to explain:

“*Monopoly* belongs to the language of domination over competition, but *copyright* belongs to the language of private property and establishes a right to enter into markets. The point of a monopoly is to extinguish competition, but the point of protecting the copyright of authors is to ignite competition. The recognition of copyright increases the number of competitors; its aim is the opposite of monopoly... [C]ritics further forget that existing patents and copyrights often inspire new rounds of competition to ‘go around’ the existing claims, with the hope of launching more successful creations. This is especially true in medical and pharmaceutical research. Patents and copyrights do not end competition; often, their success inspires it in surrounding areas.”¹⁴

Indeed, the economic logic of protecting intellectual property is straightforward. Incentives for creativity, invention and innovation – all critical to economic development – are secured and enhanced. At the same time, equating patents and copyrights with monopolies is fallacious. To the contrary, as Novak and others have argued, such legal protections of intellectual property don’t impede competition, but instead boost beneficial rivalry.

The History

The obvious follow up question is: Does history support or follow this economic logic?

Throughout so much of history, government abused, never acknowledged any substantive notion of, or failed to adequately protect property rights.¹⁵ Under Europe's feudal system, for example, with arbitrary assessments by the sovereign on property a constant threat, it was "prudent for any considerable accumulation of assets of the subject to be held in mobile and concealable form."¹⁶ This was hardly conducive to economic development.

Nobel Prize winning economist Douglass C. North and Robert Paul Thomas made clear the importance of property rights at the open of their book *The Rise of the Western World*. The authors stated: "The affluence of Western man is a new and unique phenomenon. In the past several centuries he has broken loose from the shackles of a world bound by abject poverty and recurring famine and has realized a quality of life which is made possible only by relative abundance... Efficient economic organization is the key to growth; the development of an efficient economic organization in Western Europe accounts for the rise of the West. Efficient organization entails the establishment of institutional arrangements and property rights that create an incentive to channel individual economic effort into activities that bring the private rate of return close to the social rate of return."¹⁷

Where property rights were recognized and protected against governmental abuses, economic development leaped ahead. England's Magna Carta in 1215 obviously must be noted, and other legal advancements after the Middle Ages made a significant difference. As for IP, the first true patent system that promoted invention and innovation came in the United Kingdom with the Statute of Monopolies in 1624. The UK also gets credit for the first copyright law with the Statute of St. Anne in 1710.

In the U.S., the nation's Founders overwhelmingly saw the wisdom of protecting intellectual property. As a result, Article I, Section 8 of the U.S. Constitution includes that Congress has the power: "To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." In *Federalist XLII*, James Madison wrote: "The utility of this power will scarcely be questioned. The copy right of authors has been solemnly adjudged in Great Britain to be a right at common law. The right of useful inventions, seems with equal reason to belong to the inventors. The public good fully coincides in both cases, with the claims of individuals." (In the U.S. currently, the term for a new patent is 20 years from the time the application for the patent was filed, while copyright lasts for the life of the author plus seventy years.)

North and Thomas noted that the key aspect of the Statute of Monopolies in 1624 was that it "embodied in the law a patent system to encourage any true innovation."¹⁸ Later, they continued: "In effect the rewards of innovating were no longer subject to royal favor, but were guaranteed by a set of property rights embedded in the common law"¹⁹

In *How the West Grew Rich*, Nathan Rosenberg and L.E. Birdzell, Jr., acknowledged the role that greater security of property played in the expansion in trade between 1300 and 1750.²⁰

Rosenberg and Birdzell also explained how innovation and economic growth benefited from patents. Note that the authors speak of patents under the umbrella of competition, not monopoly. They observed:

“Competition also became involved in innovation. The market rewards of innovation depended largely on the innovator’s ability to charge a high price for a unique product or service until such time as it could be imitated or superseded by others. The rewards deepened, in other words, on the innovator’s margin of priority in time over imitators and successors. This was true even of patents, which go to the first inventor, and whose economic life is measured by the time it takes to find a better alternative. Given the multiplicity of Western enterprises, the possibility of forming new ones, and the possibility that old ones could shift to new activities, the process of gaining the rewards of innovative ideas takes on the characteristics of a race, informal but still competitive. The competitive nature of the process was intensified by the Western practice of leaving the losers to bear their own losses, which were often substantial. This use of a competitive spur to stimulate change was a marked departure from tradition, for societies and their rulers have almost always strongly resisted change unless it enhanced the ruler’s own power and well-being.”²¹

In his *Structure and Change in Economic History*, Douglass C. North made the case that “the Industrial Revolution was an acceleration in the rate of innovation” due to “better specified property rights,” which raised “the rate of return on innovating.”²² He later went on to show and explain that “throughout man’s past he has continually developed new techniques, but the pace has been slow and intermittent. The primary reason has been that the incentives for developing new techniques have occurred only sporadically. Typically, innovations could be copied at no cost by others and without any reward to the inventor or innovator. The failure to develop systematic property rights in innovation up until fairly modern times was a major source of the slow pace of technological change.”²³ North added that “a systematic set of incentives to encourage technological change and raise the private rate of return on innovation closer to the social rate of return was established only with the patent system... More important than patent law per se is the development and enforcement of a body of impersonal law protecting and enforcing contracts in which property rights are specified.”²⁴

As for the twenty-first century economy, Harold Furchtgott-Roth, a former FCC commissioner, made clear the effect of protecting IP in an April 18, 2002, American Enterprise Institute speech:

“Intellectual property is in some ways the highest form of economic activity. It is a form of property that would not exist absent law. Many of the most subtle and complex forms of contracts in the world involve intellectual property. We also have a natural experiment: a few countries, including the United States, take intellectual property laws seriously; and much of the rest of the world does not. Not surprisingly, the countries with serious intellectual property laws have

substantially more intellectual property and investment than the countries that do not take the laws seriously.

“The U.S. is the international intellectual property leader not because of any natural resource allocation. It is not because we have great forests, or natural resource deposits. Nor is it because we are smarter than other people.

“The United States is strong in intellectual property because we take intellectual property serious. We have laws that protect intellectual property more here than in most countries around the world. And, even more importantly, we have a government that takes enforcement of those laws seriously. Not as seriously as some would like, but seriously nonetheless.

“As a result, and precisely because we are not smarter than other people, smart people from around who want to capitalize on their own intellectual property gravitate to the United States. Whether it is software engineers to Silicon Valley, recording artists to Nashville, video artists to Hollywood, writers to New York, manufacturing geniuses to Chicago, medical geniuses to Boston, many people with ambition to develop their own intellectual property wants to be in the United States.”

That is a notable summation of the power of IP as properly protected in our high-tech, modern economy. It also jibes with the excellent summation of the historical lessons on property rights offered by Rosenberg and Birdzell:

“Governments also affect economic growth by the nature of the property rights that they establish and enforce. People are, for example, not very likely to invest in expensive enterprises unless they have some assurance that the fruits of investment will accrue to the investor. Property rights are not a simple matter of supplying police protection, but rather of formulating legal rights and liabilities in such a way that the benefits and costs of economic action accrue, so far as possible, to the actor. Through this service, if well performed, is of great economic benefit...”²⁵

Today’s Challenge

How much does IP matter in today’s economy? Well, in an article in the November 8, 2005, *Wall Street Journal*, Bob Wright, vice chairman of General Electric and CEO of NBC Universal, reported the findings from a study quantifying IP’s impact on the U.S. economy. According to this analysis, IP-based businesses accounted for almost 20 percent of the private sector’s contribution to GDP, and 40 percent of real economic growth.

Paradoxically, however, many of the same technological advancements that serve as part of the foundation for our IP economy threaten to undermine it.

One of the factors working in favor of the creator, innovator or inventor over the centuries, even far into the twentieth century, was the cost of copying or duplication, according to Tom Bethell in his book *The Noblest Triumph: Property and Prosperity Through the Ages*. Bethell, however, added: “The digital revolution, on the other hand, may have changed everything. Once information is digitized, its physical embodiment drops away. It then becomes much more difficult to protect, and therefore to own... What took the scribe a year, and the Xerox machine an hour, can now be copied in seconds. And when copies multiply, value collapses. Information can be multiplied almost without cost and transmitted to any number of distant terminals. Furthermore, it can be copied exactly, not in a form that becomes increasingly inexact with each succeeding ‘generation.’”²⁶

The irony here also is not missed by Bethell: “An information economy is one in which the value added by intellectual goods, such as songs and films and software, is higher at the margin than that added by steel or oil. But thanks to the possibility of almost costless replication, that ‘value added’ is threatened with collapse. Such goods are like pillars of sand – perhaps one should say silicon. They will tumble down unless shored up. If a borrowed car could be ‘copied’ as easily as borrowed software, the automobile industry would collapse immediately.”²⁷

Bethell made these points in 1998. That’s eight years ago, and in the high-tech digital world we live in, seemingly eons ago. Yet, the problem Bethell explained has only grown. Computers have only gotten faster, and high-speed Internet connections more ubiquitous. These and other advancements have made the global economy far more integrated. As Harold Furchtgott-Roth noted, however, few countries take IP protection seriously. Can – or even should – copyright and patent protections survive in such a world?

Douglass C. North noted that controversy has long swirled around the value of patents, and he acknowledged that rules will be imperfect and carry costs. However, he made a fundamental point worth recalling in today’s shrinking, digital world: “But as compared to no protection at all, the value of some property rights over invention is not an issue. Idle curiosity or learning by doing will produce some technological change of the type we have observed throughout human history. But the sustained devotion of effort to improve technology – as we observe in the modern world – is stimulated only by raising the private rate of return.”²⁸

In the end, the issue of cost in a digital economy and Internet only makes a difference in an economy with clear copyright and patent laws to the extent that competitors or consumers stand willing to abide by or ignore those laws, and to the extent that government stands willing to enforce or ignore those laws. So, just because copying has become a costless endeavor in terms of time and resources spent does not mean that we must surrender to blatant theft.

In a *Wall Street Journal* column, Alan Murray seemed to take such theft as a given. He wrote: “In the digital age, there is no marginal cost, or at least very little, for copying ideas. Great books and movies, clever software, life-saving drugs, breakthrough computer chips, all are difficult to create, but are replicated with ease... There are no clear-cut answers to these problems, and no free-market solutions. Ultimately, governments must decide how to balance the need to encourage innovation against the need to spread its benefits.”²⁹

Again, this is a perplexing argument. In reality, there is a clear-cut, free market answer. The copying that Murray refers to, of course, is nothing more than stealing. Protecting property is the key fundamental role for government in a free market economy. For good measure, no conflict exists between encouraging innovation and spreading its benefits. History shows how this all works -- protect intellectual property, innovation is encouraged, market participants have the incentive to commercialize innovations, consumers benefit and the economy grows. A global, high-speed, digital economy does not change the fundamentals of human nature and economic common sense.

The real, obvious and daunting challenge today is *how* to protect intellectual property, not whether or not it should be protected. Rather than tossing copyright and patents overboard, the opposite needs to be done. These protections need to be beefed up domestically and globally. That should involve assorted measures, including through trade accords, tougher and more consistent criminal enforcement (while avoiding efforts that will crimp technological advancement), broader leeway for private efforts to combat IP theft, and through civil actions in the courts.

Private businesses, the government, schools and even religious institutions also need to provide enhanced instruction reinforcing the fundamentals of why stealing is wrong and detrimental to all – whether it be stealing physical property or intellectual property.

Economics and history show that if individuals and society want to encourage risk takers to continue to innovate, invent and create, then we need serious and substantive protection of intellectual property.

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