



Intellectual Property as a Pillar of American Exceptionalism

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Usually we associate property rights with physical property. I have a property right to a bottle of water until I drink it all. I have a property right to my house and to my car. But most of the important property rights in the modern economy are intangible property rights. If we think about the market caps of the big corporations in the United States today, many of them don't really have much in the way of physical assets. What are the physical assets of Facebook? It's a bunch of kids with hoodies. The hoodies probably have some value in the secondary market but not much. The value is in the intellectual property of the firm.

Permit me an example of how intellectual property is also key in a more traditional industry: oil and gas. What does intellectual property have to do with the fracking revolution? Almost all of the innovations that enabled the first horizontal drilling, and then the combinations of water, chemicals, and sand to keep the fractured rocks open, were

patented. One of the reasons why Midland Texas is among the wealthiest communities in the United States, with a per capita income higher than that of Silicon Valley, is the US property rights system. If you had taken away all those intellectual property rights that encouraged people to develop the technology for fracking, there would have been no fracking.

The value of intellectual property was recognized by the writers of the US Constitution. In fact, the only specific property right they wrote into the Constitution was the one pertaining to patents and copyrights. Article 1, section 8 reads: Congress shall have 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.”

One of the first things the first Congress did was to pass the Patent Act of 1790. This was a really unusual thing for a government to have done. Most countries, up to that point, did not have patent systems. Great Britain had one, but it was extremely cumbersome and costly. Although there were some important patents taken out in eighteenth-century England—and the evidence indicates that they helped promote the Industrial Revolution—patenting was not something that was broadly undertaken by the population.

The United States went in a very unusual direction for the time. The idea was that patents were going to be an administrative procedure of the government. That is, the government would not decide whether a patent was valid or not. That would be left to the courts. Americans would register their patents, paying a very small fee—about five dollars, or roughly 5 percent of the price of getting a patent in Great Britain. There was no special act of Parliament required, no need to obtain any special favor, and thus no need to pay any bribes.

The patentee, unlike under British law, had to be the first and true inventor anywhere in the world. That meant that the patent wasn't given to whoever got to the patent office first but rather to the person who

actually invented the technology or idea first. The invention then had to be available to the public immediately. That is, the patent had to be specified, when it was issued, so that when the patent term ran out it could be copied.

The purpose of this was to democratize invention and encourage innovation. It was not to create a bunch of monopolies. The whole point of a patent is that it confers property rights that can be licensed to somebody else. If anyone actually invents something that could not be backward engineered, they would never patent it; rather, they would keep it a trade secret and have a monopoly, like Coca-Cola, for which there is no patent, or Thomas' English Muffins, for which there is no patent. These are closely held trade secrets.

The point of the US patent system wasn't to create monopolies. That's not what the Founders wanted to do. They wanted to give people incentives to transact with each other, and when you create a property right, you create an incentive to trade or license that right. The whole system was based on the notion that there would be people who were inventors, and there would be people who would implement those inventions, and there would be people in between who specialize in writing contracts between inventors and implementers. Abraham Lincoln, in fact, was one of them. He was a patent attorney in the nineteenth century.

From the point of view of the inventor, the patent gave him or her—there were a lot of women inventors even in the nineteenth century—the ability to appropriate their returns from the investment they had made in developing a technology. From the point of view of society, the patent is a property right that serves as the basis for any number of contracts that can be written among all the interested parties. If you took away the property right, the whole system of contracting would break down.

Permit me an example. How many patents are there connected to a smartphone? Nobody's sure, but it's in excess of ten thousand. It may be in the hundreds of thousands. There is a complex of legal reasons why nobody knows. There are dozens of companies that own all the different

patents that make a smartphone work. If you took away the patents, it would be impossible for firms to contract with each other to put a supercomputer in your pocket that will geolocate, record video, send data around the globe to anybody, do any kind of calculation you want, and also happen to be useful for making a phone call. What makes that thing work is all the patents in it, and it's a remarkable testament to the ability of property rights to create a web of contracts to produce a product that is valued around the globe, so much so that there are now more cell phones than there are adult human beings on the planet. The average global selling price for a smartphone is \$300—which is why kids in the United States treat them as toys.

The purpose of patents was not to create monopolies, but many of the attacks on patents take the position that patents are a government-created monopoly. That is a fundamentally incorrect way to think about a patent: it is a property right. It's no more a government-created monopoly than the property right to your house is a government-created monopoly on your home.

The response to the 1790 Patent Act was remarkable. Thomas Jefferson, who was the first head of the patent office, was initially skeptical about patents. He changed his mind very quickly. There were hundreds of patents taken out within the first decade of the passage of the act. They were predominantly manufacturing patents, often being taken out by quite common people.

Among America's most notable nineteenth-century patentees was Abraham Lincoln, who patented, in 1849, a device that would raise and lower boats going up and down the Ohio River. We now think of the Ohio as navigable. But there were sandbars in the Ohio until the Army Corps of Engineers removed them. Lincoln's invention essentially put canvas bags on the side of a boat with a bellows that could be used to blow up the bags with air, lift the boat, and take it over the shoals. Lincoln himself, of course, was neither a boatman nor a manufacturer—he was a lawyer—but the idea was that he would license this

patent. Nobody ever took it up—a fact that is hardly surprising because most patents never get commercialized.

Why the focus on intellectual property among the Founders? We're very fortunate to live in an amazingly prosperous society, but this was not the case for Americans in 1790. Think back to the American Revolution. Had Great Britain not been at war with France, we would still be calling English muffins "crumpets." The Revolutionary War was won because Americans could count on French soldiers, French mercenaries, the French navy, and French money. The reason France was crucial was because the thirteen colonies were poor and Great Britain was rich.

Circa 1700, the American colonies had a GDP about equal to that of Brazil at the time. Circa 1790, we were not only poor, we were deeply in debt. The Founding Fathers wish they had our debt problems today. The debt-to-GDP ratio was somewhere in the area of four or five to one. The country was broke, in a depression, and the Founders were quite concerned that if we didn't do something to create a robust economy, we were going to become a colony of somebody else. So they embraced the concept of property rights—particularly intellectual property rights—as a spur to innovation and economic growth.

What was the result of the property rights approach of which intellectual property rights are a very strong part? The US economy took off. By 1820, we were about one-quarter to one-third as rich as Great Britain or Germany. By 1850, we were starting to approach parity with Germany and were closing in on Great Britain. By 1870, we passed Germany and reached parity with Great Britain. By 1890, we were ahead of everybody. By 1910, shortly before World War I, we already had a GDP about twice that of Germany or Great Britain. By 1930, we hit about three times that. By 1940, our GDP was approaching three and a half times those of Germany and Great Britain.

Why did the United States win World War II? We didn't have better generals. We had brave soldiers, but our enemies had brave soldiers, too. We simply outproduced the Axis powers. Why were we able to do that?

Because we had a property rights system, of which intellectual property rights were a key part, that incentivized invention and innovation. If there is a central lesson in American history for the rest of the world, it's that if you want to be wealthy, you need property rights.

Last year, I was lecturing about this in China. I kept talking about property rights, and they looked at me as if to say, "Of course we have property rights." It finally dawned on me, that whenever I was saying property rights, they were thinking, "Well, the state owns everything." They have property rights, but they are collective property rights. Private property rights took several hours to explain. I thought it was just my New York accent.

In the United States, the Silicon Valley of the late nineteenth century was Cleveland. The electrical machinery industry was a Cleveland industry, made up of lots of small and medium-size firms. There were some big giants eventually, such as Westinghouse and General Electric, but what's so interesting about the electrical machinery industry is how many small firms there were operating in it, all filing patents, all defending their property rights. And the courts were protecting those rights. In short, the patent system allowed the American electrical machinery industry to leapfrog over its major competitor, Germany.

What do we know from economic historians and the work of development economists? There are no wealthy countries without strong patents. As property rights become stronger, and intellectual property rights become stronger, GDP increases. Causality runs from the property rights to GDP, not from GDP to the property rights.

This brings us to a puzzle. Why is it that courts, legislatures, and recent presidents have tried to weaken patent rights? If there's a theme about property rights in the past eight years or so, it's that intellectual property rights are bad and are blocking innovation. In 2006, the Supreme Court, in the eBay decision, made it harder to obtain an injunction, that is, a stay order, against an infringer. It used to be that if

people were infringing your patent, you could get an injunction to stop them from producing and selling. It's now very hard to get an injunction, which has discouraged innovation.

The America Invents Act of 2011 removed the "first to invent" feature of our system and replaced it with a "first to file" feature. It also created an administrative court that can be used to challenge the validity of patents. In the past, you had to go to a federal court to do this. Now, you can do it in an administrative court within the patent office.

From 2013 to 2015, Congressman Bob Goodlatte was pushing the Innovation Act, which is anything but that. The idea is that if you're suing someone who's infringing your patent and you lose, you pay the other side's legal costs. There are other features of this that are problematic, but this particular one discourages an inventor from taking a big manufacturer to court because the inventor will wind up broke.

In 2013, the Obama White House brought out a study about the dangers to American innovation created by patent trolls, firms that buy patents and then sue operating companies. Recently, the Supreme Court, in the *Alice Corp.* decision, made it more difficult to enforce a patent on software. Under the Obama administration, the Antitrust Division of the Justice Department regularly threatened to use the antitrust laws against holders of what are called standard-essential patents. These are the patents that allow every cell phone to talk to every other cell phone, for example.

A colleague of mine and I decided to see how great the threat of patent trolls was to the innovation system. The total revenues of high-tech industries in the United States are \$627 billion a year. The litigation costs plus the revenues of patent trolls amount to roughly 1 percent of that figure. That's an upper-bound measure. It's very hard to maintain that the innovation economy is threatened by an industry, the patent troll industry, whose total revenues and litigation costs are less than what Americans spend on Halloween every year. We spend \$7 billion on Halloween (of which \$365 million is on pet costumes).

Who's running the anti-patent movement? I'm doing some research with a young colleague on this, and the answer is that it's a very small group of very big tech companies that would like to pay less for patents held by small inventors and small firms than they would otherwise. Google, it turns out, has been an extremely active lobbyist in this area; not only has Google spent large sums, but it also placed large numbers of former Google employees, and lawyers who have represented Google, in the Obama White House.

In short, the bottom line is this: if you take away the intellectual property rights, you take away innovation, wealth, and the ability to influence world events—the very things that make America exceptional.