

## *The Myth of the Lone Inventor*

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Any elementary-school student can recite a number of canonical American invention stories. Thomas Edison invented the light bulb from his famous home laboratory in Menlo Park, New Jersey. Alexander Graham Bell invented the telephone, again from his home invention laboratory, famously using the phone to call his assistant, saying “Come here, Watson, I need you.” Orville and Wilbur Wright invented the airplane from their bicycle shop, taking it to Kitty Hawk, North Carolina to put it in the air. The list of lone genius inventors goes on and on: Samuel Morse and his telegraph, Eli Whitney and his cotton gin, Robert Fulton and his steamboat, Philo Farnsworth and the television, etc., etc.

Patent law is built around these canonical tales. The very theory of patent law is based on the idea that a lone genius can solve problems that stump the experts, and that the lone genius will do so only if properly incented. We deny patents on inventions that are “obvious” to ordinarily innovative scientists in the field. Our goal is to encourage extraordinary inventions – those that we wouldn’t expect to get without the incentive of a patent.

The canonical story of the lone genius inventor is largely a myth. Edison didn’t invent the light bulb; he found a bamboo fiber that worked better as a filament in the light bulb developed by Sawyer and Man, who in turn built on lighting work done by others. Bell filed for his telephone patent on the very same day as an independent inventor, Elisha Gray; the case ultimately went to the U.S. Supreme Court, which filled an entire volume of U.S. Reports resolving the question of whether Bell could have a patent despite the fact that he hadn’t actually gotten the invention to work at the time he filed. The Wright Brothers were the first to fly at Kitty Hawk, but their plane didn’t work very well, and was quickly surpassed by aircraft built by Glenn Curtis and others – planes that the Wrights delayed by over a decade with patent lawsuits.

The point can be made more general: surveys of hundreds of significant new technologies show that almost all of them are invented simultaneously or nearly simultaneously by two or more teams working independently of each other. Invention appears in significant part to be a social, not an individual, phenomenon. Inventors build on the work of those who came before, and new ideas are often “in the air,” or result from changes in market demand or the availability of new or cheaper starting materials. And in the few circumstances where that is not true – where inventions truly are “singletons” – it is often because of an accident or error in the experiment rather than a conscious effort to invent.

The result is a real problem for classic theories of patent law. If we are supposed to be encouraging only inventions that others in the field couldn’t have made, we should be paying a lot more attention than we currently do to simultaneous invention. We

should issuing very few patents – surely not the 200,000 per year we do today. And we should be denying patents on the vast majority of the most important inventions, since most seem to involve near-simultaneous invention. Put simply, our dominant theory of patent law doesn't seem to explain the way we actually implement that law.

Maybe the problem is not with our current patent law, but with our current patent theory. But the dominant alternative theories of patent law don't do much better. Prospect theory – under which we give patents early to one company so it can control research and development – makes little sense in a world in which ideas are in the air, likely to be happened upon by numerous inventors at about the same time. And commercialization theory, which hypothesizes that we grant patents in order to encourage not invention but product development, seems to founder on a related historical fact: most first inventors turn out to be lousy commercializers who end up delaying implementation of the invention by exercising their rights.

If patent law in its current form can be saved, we need an alternative justification for granting patents even in circumstances of near-simultaneous invention. I consider two other possibilities. First, patent rights encourage patent races, and that might actually be a good thing. Second, patents might facilitate markets for technology. Both have some logic to them, but neither fully justifies patent law in its current form. As a result, I offer some suggestions for reforming patent law to take account of the prevalence of simultaneous invention.