

Citizens have right to improve technologies without fear of legal action, professor says

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The time has come for a philosophical change in the way the American legal system, government and private business view innovations created by private citizens, a University of Kansas professor argues in a new law review article. "Citizen innovators" have the legal right to develop new and better technologies without fear of interference from overregulation and excessive intellectual property. The "right to innovate" flows from the U.S. Constitution, the common law, federal laws called "organic statutes" and presidential executive orders.

Andrew Torrance, Earl B. Shurtz Research Professor at KU School of Law and visiting scientist at the MIT Sloan School of Management, and his colleague, Eric von Hippel, T. Wilson Professor of Management at the MIT Sloan School of Management, have co-authored "The Right to Innovate," a Michigan State Law Review article that offers three approaches to protecting "citizen innovators" and their right to engage in noncommercial [innovation](#) to satisfy their own needs and to share their innovations freely for the betterment of society.

Technology has greatly leveled the playing field of innovation. Whereas private companies and government were formerly believed to create almost all new products and technologies, von Hippel's pioneering economic research on "user innovation" has revealed that private citizens can, and do, also produce new medicines, medical devices, software, automotive improvements, educational methods and myriad other useful inventions in their own homes. As long as they are not endangering anyone or profiting from their work, their innovative activities are

largely beyond the jurisdiction of regulatory agencies and [intellectual property](#) owners, the authors argue.

"Citizens have a robust legal right to innovate in all sorts of ways. From medical devices to drones, to better ways to irrigate fields, the sky is the limit," Torrance said. "The pressure they face from government is unwelcome, chilling and often illegitimate. The right to innovate benefits all of society and is one of the rights of citizenship."

The authors use the metaphor of "innovation wetlands" in their work. Historically in the United States, wetlands were viewed as barriers, wastefully unusable lands or even health hazards. They were denigrated as "malarial swamps" and feared as breeding grounds for diseases. The only good swamp was a drained or filled-in swamp. However, biological science eventually discovered they, in fact, provide numerous vital ecological amenities, such as cleaning water, providing refuge for migrating birds, acting as nurseries for young fish and buffering against floods. These discoveries in time led to the Clean Water Act of 1972 that protects wetlands.

Whereas private citizens who develop their own products and improve existing products, were long thought to pose nuisances or cause harm to businesses and government, a vast body of empirical evidence now shows that citizen innovation is, in fact, greatly beneficial to society, Torrance says. Some studies suggest that most useful innovation originates from noncommercial citizen innovation rather than corporate and governmental research and development efforts.

Torrance shares the example of NightScout, a group of software engineers who successfully hacked a Food and Drug Administration-approved medical device designed to make careful measurements of blood sugar in individuals with Type-1 diabetes. NightScout then was able to improve the device by allowing its output to be viewed on any

smartphone via a custom-written app. Using this app, loved ones could monitor the blood-glucose levels of their children, spouses or friends. In fact, NightScout is named after the need to monitor blood-glucose levels of Type-1 diabetics while they sleep – a dangerous time for these people due to the constant threat of falling into a diabetic coma, or dying, while asleep. Though the technology was made available to anyone for free, the FDA initially tried to stop such innovation, which they see as potentially dangerous. In the end, the FDA seemed to conclude that they lack jurisdiction to stop such innovation.

"Even the FDA realizes there is not much you can do to stop citizen innovation. If you think about it from an ethical perspective, regulatory agencies should generally celebrate, not try to stop, such improvements," Torrance said. "As a default position, government agencies often assume they have the legal right to stop citizen innovation. A proper reading of the law, including both constitutional and venerable common law principles concerning commerce, liberty, autonomy, privacy, free association and free speech, shows this socially harmful attitude to be legally unjustified. The right of citizens to innovation to satisfy their own needs, and then freely share their innovations with others, is quite strong."

Private companies do need governmental permission when developing new technologies because they intend to profit from them. If money crosses state lines in association with such innovation, regulatory agencies do have jurisdiction over such activities. Noncommercial citizen innovation, however, is largely free of such oversight.

Citizen innovators often abandon inventing when faced with governmental scrutiny or legal action because they are either unaware of their rights or lack the resources to hire attorneys to defend them. This sort of overregulation and overlitigation stifles innovation and harms society, the authors argue. To combat this chilling effect, the authors

include a "toolkit" for innovators to help them understand their rights.

The toolkit outlines the right to liberty; privacy; First Amendment rights to free speech, press and association; the Fourth Amendment, and rights reserved to the people, among other legal principles protective of citizen innovation. Innovators often are not aware of their rights, such as a right to privacy, which discourages governments and others from prying into activities carried out in citizens' own homes. Knowledge of those rights is vital as there are millions of citizen innovators, and their activities vastly outweigh those of all private and governmental research and developmental employees combined, Torrance said.

The authors also outline common law rights that protect innovation among private citizens, discuss ways in which governments should account for the benefits of citizen innovation and the costs of overregulating it, in their own cost-benefit analyses, and the benefit of designing regulations that citizen innovators can comply with at very low costs.

Technology has rapidly evolved, drastically changing the paradigm of innovation. As von Hippel has written, this has "democratized" innovation. Whereas only government or academics were able to access computers and sophisticated technical equipment in the past, people can now program software on their smartphones, scan and replicate physical objects at home, and even engage in biotechnological research and development once impossible outside expensive laboratories. Torrance and von Hippel argue it is time for the law to evolve and recognize that a "democratization of innovation" is not only legal, but it is beneficial as well.

"The fact that innovation is coming from new sources is wonderful for society," Torrance said. "But the legal system is better at crushing citizen innovation than fostering and protecting it. What Eric and I are

concerned about is that, if you don't recognize this vital source of innovation, and protect it from overregulation and overzealous application of intellectual property, you risk destroying it just as we used to destroy wetlands. In both cases, we need to celebrate these valuable amenities and enlist the law to ensure they survive and thrive."

More information: Andrew W. Torrance et al. "Protecting the Right to Innovate: Our 'Innovation Wetlands'," *SSRN Electronic Journal* (2013). [DOI: 10.2139/ssrn.2339132](https://doi.org/10.2139/ssrn.2339132)

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