The 2014 ITIF Luddite Awards

BY ROBERT D. ATKINSON | JANUARY 2015

Fostering an environment in which innovation can thrive means first and foremost actively rejecting the increasingly vocal chorus of "neo-Ludditism" that pervades Western societies today.

Technological innovation is the wellspring of human progress, bringing higher standards of living, improved health, a cleaner environment, increased access to information and many other benefits. Despite these benefits a growing array of interests—some economic, some ideological—now stand resolutely in opposition to innovation. Inspired by Englishman Ned Ludd, whose actions helped spur a social movement in the early 19th century to destroy textile machines, todays neo-Luddites likewise want to "smash" today's technology.

However, while for the most part today's neo-Luddites no longer wield sledgehammers, they do wield something much more powerful: bad ideas. For they work to convince the public and policymakers alike that technological innovation is something to be thwarted. Indeed, the neo-Luddite target is broad, including genetically modified organisms, new Internet apps, smart electric meters, broadband networks, health IT, big data, and increasingly productivity itself.[1] In short, they want a world in which risk is close to zero, losers from innovation are few, and change is glacial and managed.

These aren't just interesting social and political developments. Rather they go to a central challenge of our time: the need to rapidly raise living standards and quality of life around the globe. For without society supporting risk taking and the constant and rapid introduction of new technologies neither goal will be accomplished. Fostering an environment in which innovation can thrive means first and foremost actively rejecting the increasingly vocal chorus of "neo-Ludditism" that pervades Western societies today. Indeed, if we want a society in which innovation thrives replacing neo-Luddism with an attitude of risk taking and faith in the future needs to be at the top of the agenda. (To

determine how friendly you are toward technological innovation, go to www.doyoulikeprogress.org and take the test).

To highlight the worst of these bad ideas that if followed would lead to reduced human progress, ITIF is releasing its first annual Luddite nominations given to recognize the organizations and or individuals that in 2014 have done the most to smash the engines of innovation. These are in no particular order:

1. The National Rifle Association Opposes Smart Guns

2. The Vermont Legislature Passes a Law Requiring GMO Food Labeling

3. Arizona, Michigan, New Jersey, and Texas Prevent Tesla From Opening Stores to Sell Cars Directly to Consumers

4. The French Government Stops Amazon From Providing Free Shipping on Books

5. "Stop Smart Meters" Seeks to Stop Innovation in Electric Meters and Cars

6. Free Press Fights Against Smarter Broadband Networks

7. New York State Cracks Down on Airbnb and its Hosts

8. Virginia and Nevada Take on Ride Sharing

9. The Media and Pundits Claim That "Robots" Are Killing Jobs

10. The Electronic Frontier Foundation Opposes Health IT

WHAT IS LUDDITISM?

Ludditism is not, as many people assume, a term for someone who is a late adopter of technology or who isn't proficient with the latest technological gadgets, as in "I am a real Luddite, I don't know how to program my DVD or I don't use Twitter."[2] Rather, a Luddite is someone who opposes technological change, seeking to hold back the introduction of new technologies into society, regardless of whether or not they use the technology. A Luddite is not someone who is the last in their social circle to get a smart vehicle, for example, but someone who supports action to keep companies from being able to produce and sell smart vehicles.

There are two main well-springs of Ludditism. The first is what the original Luddite movement was grounded in: self-interested opposition to technological change. After all the followers of Ned Ludd smashed textile machines not because they didn't like technology and longed for a pastoral life; they smashed the machines to save their own poorly paid, low-productivity jobs. If others—in this case, the rest of the world that bought clothing made by English firms had to pay higher prices, so be it. Unfortunately there is no evidence that 200 years later such interest-based Ludditism is on the wane. Indeed, as noted economist Joseph Schumpeter wrote, "the resistance which comes from interests threatened by an innovation in the productive process is not likely to die out as long as the capitalist order persists."[3] In fact, as we make the transition to a tech-driven economy with a proliferation of new and disruptive business models, opposition appears to growing. Computer scientist Alan Kay, who famously said that "the best way to predict the future is

to invent it," captures this new wave of opposition when he says now, "the best way to predict the future is to prevent it."[4]

The second source of Luddite opposition is ideological. In many ways this is more powerful than interest-driven Ludditism for it cloaks itself in the mantle of the public good. We are opposing ___ (fill in the blank of the latest technological innovation) because we want to protect people from ___ (fill in the blank of the purported harm: job loss, health impacts, loss of privacy, a degraded environment, loss of freedom, etc.). While the specifics of the claims may differ, what is behind all ideological Ludditism is the general longing for a simpler life from the past—a life with fewer electronics, chemicals, molecules, machines, etc.

Perhaps the most prominent intellectual leader of ideological Ludditism that has emerged in recent years is ecotopian Bill McKibben, a "Distinguished Scholar" at Middlebury College, but in truth, an activist and propagandist, rather than an objective scholar or teacher. (To be fair to Middelbury, many ideological Luddites make their home at universities and colleges and claim to simply be exposing their students to the truth). Regularly quoted by the mainstream media as a leading voice on solutions to climate change McKibben is, in fact, a radical anti-innovationist. Anyone who calls Kerala, a state in India with a per capita income less than 5 percent of America's, "profoundly more successful" than America and who pins the hopes of solving climate change on rich nations becoming poor and poor nations staying poor doesn't understand the power of innovation, and probably never has been poor.[5] Only sustained clean energy innovation, not sustained impoverishment (or for that matter top down regulation), is the answer to climate change.[6] And needed innovation won't arise from a bunch of self-sufficient back-to-the-woods advocates composting their kitchen waste and burning cords of hardwood.

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As noted, ideological Ludditism thrives in university settings where inexperienced young people seeking to do good in the world are easy prey for such simplistic thinking. Case in point was New York University's Neil Postman who wrote:

> I think the single most important lesson we should have learned in the past twenty years, is that technological progress is not the same things as human progress. Technology always comes at a price. This is not to say that one should be, in a blanket way, against technological change. But it is time for us to be grownups, to understand if technology gives us something, it will take away something. It is not an unmixed blessing.[7]

Indeed, today college students are told in a myriad ways that their great-grandparents were dupes to be so taken with technology and to yearn for and expect a better a future. They were not, as Postman would have us be, "grown-ups." Try telling the farmer who was able to turn in his horse and plow for a Ford tractor, the woman who did not have to haul in blocks of ice to keep the "icebox" cool, or the family that didn't lose their infant because of advances in medicine how naive they were to put their faith in these advances. Perhaps it's only a society that has these and other technological advancements that can afford to produce an intellectual class so dismissive of them.

A driver for both sources of neo-Ludditism is fear. Individuals and organizations oppose genetically-modified organisms, smart electric meters, and a host of other technologies because they believe that the harms significantly outweigh the benefits. In other cases, the opponents experience most of the harms with society at large getting most of the benefits. But even in these cases neo-Luddites almost always overstate the harms and risks and understate the benefits. But it is more than this. Most neo-Luddites privilege the values related to the harms (for example, seeing privacy as a fundamental human right rather than a right that competes with other values, such as freedom, prosperity and even existence) while downplaying, or even disparaging the benefits (for example, dismissing the central importance of productivity, in part by asserting, inaccurately, that it doesn't benefit average workers).[8] With the scales tilted thus, it is much easier for neo-Luddite vision to gain adherents.

A SHORT HISTORY OF LUDDITISM

Historically there has always been opposition to change and the resistance has usually been the most heated at economic and technological turning points that threaten existing interests and well-established ways of life. The original Luddites fought technology fundamental to the first industrial revolution in Britain. Southern agrarians fought the spread of northern industrialization and with it the shift from slavery to wage work, culminating in the U.S. Civil War. Thirty years later U.S. populists sought to protect small farmers and merchants from the onslaught of industrialism.

The emergence of new technologies and industries has also long sparked resistance not just from social groups, but from capitalists who find themselves on the losing end. As railroads spread in the 1850s, river boat companies on the Mississippi, allied with boat builders and even the city of St. Louis, sued a railroad company for damages after a boat crashed into a rail bridge over the Mississippi, and sought to have the bridge removed. Because of the persuasive powers of an up and coming lawyer named Abraham Lincoln, who argued for the railroad in court, the shippers lost. In the 1920s, the Horse Association of America, a lobbying/public relations group (the group, which later changed its name to the Horse and Mule Association of America) was allied with organizations such as the Master Horseshoers National Protection Association, the National Hay Association, and the Eastern Federation of Grain Dealers to vigorously campaign to limit the use of trucks on public roads. They even conducted, successfully in many places, a nationwide campaign to prohibit automobile parking on principal streets. In the 1930s, the musicians' union, faced with the substitution of recorded music for live orchestras in movie houses, launched a massive public relations campaign, hoping to convince the public to demand live music (and pay more for it). In the 1940s under pressure from the French wine industry and with support from the Communist Party, the French government came close to banning soft-drinks (e.g., Coke). In the 1950s, the National Milk Producers Federation secured legislation in a number of states preventing margarine makers from selling yellow spread, since it would have made people less likely to buy cheaper margarine instead of butter.[9] Most recently, floor traders sued the owner of the Chicago Board of Trade in an attempt to reverse new rules that further automate commodities trading.[10]

In short, technology-based economic progress has not come without a struggle. Historian

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David Landis puts it well when he says that, "technological change is never automatic. It means the displacement of established methods, damage of vested interests, often serious human dislocations."[11] But notwithstanding opposition, one of the key reasons America became the global innovation leader was the widespread embrace the new. When economist Benjamin Anderson wrote in the 1930s that, "on no account, must we retard or interfere with the most rapid utilization of new inventions," he wasn't saying anything out of the ordinary.[12] Indeed, even U.S. socialists consistently rejected Ludditism, as when Jack London called on the working man to "Let us not destroy these wonderful machines that produce efficiently and cheaply. Let us control them. Let us profit by their efficiency and cheapness. Let us run them by ourselves. That, gentlemen, is socialism."

Indeed, for many decades in America "Luddite" was a term of derision, representing someone who wanted to stand in the way of progress. As Professor Robert Friedel writes, "at every step along the way in this history [of technology] there have been debates, sometimes quiet, often violent, about improvement. Who should define it? Who should benefit from it. Who must pay the inevitable costs?"[13] But he writes, "since the end of WWII, the impressive achievements of technology along with the rapidly expanding scale of Western economies had reduced the influence of technological critics to the fringe of public life."[14] To be sure, in the post-war era voices like Lewis Mumford and Jacques Ellul asserted a general critique of "technology, however, they were lonely voices in the larger culture."[15] But that has all changed now.

LUDDITISM TODAY

Alas, what used to be lonely Luddite voices is now a chorus of Luddite enthusiasm. Indeed Ludditism has been making an intellectual comeback, in part led by anti-technology forces in the foundation world and the advocacy groups they support, in the academy, and the media.

First, we're seeing the increasing voice of foundation-funded advocacy groups, such as the Sierra Club, Free Press, the misnamed Center for Food Safety, and others, whose mission is to challenge technological progress on behalf of those purportedly hurt by it. These groups rely largely on fear-mongering to retain their foundation funding and drum up grassroots donations, ironically through the use of the World Wide Web. Representatives from many of these organizations recently gathered in New York for a "teach-in" entitled "Techno-Utopianism and the Fate of the Earth" which featured sessions on topics such as "Technology Versus Nature," "Cyber Envelopment," "Techno Solutionism" and the ever present, "Not Globalization, Localization," (and of course no anti-tech conference would be compete without Bill McKibben, who spoke on something called "hybrid economics").[16]

Second, over the last decade many academics, pundits and consultants have realized that the key to making a name for themselves and getting the lucrative speaking gigs is to write the "dog bites man" article or book that tells us why we are losing the war against machines, how we are now a captive audience to broadband providers, and why we need to fear what the Internet is doing to our brains.[17] At the risk sounding old-fashioned, when I received my PhD in the 1980s, the ethos for academics was to leave bias and advocacy to

the hacks and amateurs. Our job was to strive, albeit imperfectly, for objectivity. But objectivity and balance no longer sells books or gets you that coveted TED Talk about why the Internet is a tool for dictators or why innovation is dead.[18]

Third, in a relentlessly competitive world, the media face the same market pressures as civil society groups and academics. To maximize the number of "eyeballs" viewing their content they all too often portray technology as fearsome and imposed by powerful, impersonal governments and corporations. Thus, *60 Minutes* and the Associated Press have featured stories on the perils of automation, PBS runs a documentary called "Seeds of Death" that takes up the false argument that genetically modified organisms (GMOs) are dangerous, and almost all media coverage of new information technologies comes with the obligatory "this is the end of privacy as we know it" warning.[19]

Thus, these opponents of change have succeeded in reshaping the public's view of the future from one of faith in the future and optimism about tomorrow, to one where resistance to change is legitimized as worthy civic involvement, even when it stems from the most blatant protectionism or irrational fear. To be sure Luddites are not new. But what is new is how well organized today's neo-Luddites are, how seriously they are taken by a media industry hungry for the next exciting story, and how effectively they use the political system to advance their Luddite agendas.

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Indeed, over the last two decades, at least in America, many have engaged in a project to rehabilitate Ludditism from its prior "tinfoil hat-ism"stigma. As York University historian and Luddite supporter David Noble wrote: "Social historians have made great strides ... to redeem (the Luddites)".[20] As a result, what was once an economic and political system that treated change and innovation as "innocent until proven guilty," now more often than not treats change as "guilty until proven innocent."

But it's more than the fact that opponents of change are more mobilized than ever, it's that America's faith in the very goodness of progress has diminished. The faith that our parents and grandparents one put in the future and progress is seen by many as the naive and romantic dreams of innocents from another age. "Today's neo-Luddites continue to raise moral and ethical arguments against the excesses of modern technology," writes Geoffrey Pointras, professor of business administration at Simon Fraser University."[21]" He goes on to assert "A key theme is that the technological inventions and the technical systems that support those inventions have evolved to control, rather than to facilitate, social interactions. The upshot is that the breadth and depth of technological change in modern society threatens the essence of humanity."

Not to be outdone, Yale University computer scientist David Gelernter has recently called for an anti-Internet movement in line with neo-Luddite ideals, stating, "I think it (an anti-Internet movement) would be tremendously valuable, not in the sense of a destructive Luddite movement that makes it a practice of destroying computers."[22] Some even go so far as to write "The Industrial Revolution and its consequences have been a disaster for the human race." Of course, the author of this manifesto was Unabomber Ted Kaczynski. As a such, it appears that Francis Collins, former head of the Human Genome Project and now

Director of the U.S. National Institutes of Health, was too conservative when he predicted in 2001, "Major anti-technology movements will be active in the U.S. and elsewhere by 2030."[23] The sad reality is that they are active now.

Indeed, when no less an august source as *Smithsonian Magazine* writes the following, it's clear there is a problem:

> The original Luddites would answer that we are human. Getting past the myth and seeing their protest more clearly is a reminder that it's possible to live well with technology—but only if we continually question the ways it shapes our lives. It's about small things, like now and then cutting the cord, shutting down the smartphone and going out for a walk. But it needs to be about big things, too, like standing up against technologies that put money or convenience above other human values. If we don't want to become, as Carlyle warned, "mechanical in head and in heart," it may help, every now and then, to ask which of our modern machines General and Eliza Ludd would choose to break. And which they would use to break them.[24]

Twenty years ago, if someone wrote that the federal government was hatching a secret plan to forcibly implant radio frequency identification chips under the skin of all Americans or that if you use a contactless payment system (like Apple Pay) "all who wish to buy and sell goods will be compelled 'to receive a mark on their right hand or on their forehead,' as it says in the Book of Revelations" would be dismissed as a tin foil hat fanatic not worthy of serious attention. Yet the author of these statements, Katherine Albrecht, is regularly quoted by mainstream media, testifies at government hearings, and contributes to journals like *Scientific American*, a journal that increasingly (and ironically) provides a voice for neo-Luddites.[25]

As Bryan Appleyard writes in *the New Statesman* "From the angry Parisian taxi drivers who vandalized a car belonging to an Uber driver to a Luddite-sympathetic column by the Nobel laureate Paul Krugman in the *New York Times*, Ludditism in practice and in theory is back on the streets."[26] And literally on the streets in the case of the Experience People Tour, which received significant media coverage.[27] Brian M. Hiss, the instigator of the Tour, "is embarking on a journey across the US to explore the negative impact technology has had on society and our interpersonal relationships…. Experience People is about creating and fostering meaningful interactions with those around you. We would love the opportunity to connect with you in person, however email is a great start." Like all Luddites today that decry technology, Experience People decries technology, but has an email and web address. Indeed, a humorous cartoon sums up the contradiction when it shows a bus with an ad on it proclaiming, "Tired of all the technology: visit our web site www.luddites.com."

Neo-Ludditism doesn't just come in the "smash the machine" version; it also comes in a milder but perhaps more insidious version that while careful to not oppose innovation and evolution outright does raises doubts that appear reasoned and objective. James Pethokoukis of the American Enterprise Institute writes "Not all innovation is alike.

Incumbent firms replacing man with machine is a kind of innovation that may lift corporate profits and boost stock prices without necessarily broadly raising prosperity."[28] In reality, replacing man with machines has been the single largest driver of human standards of living in the last century. But now even conservative think tanks, which have long been unalloyed defenders of progress and innovation now see them as suspect. Another flavor of neo-Ludditism-lite is the go slow version. Charles Wolf of the Hoover Institution writes we should "move cautiously, rather than full steam ahead, in the interests of modulating the disruptive effects of impending new technology on societal harmony… In general, more innovation is preferable to less, but that doesn't imply that a lot more is better than just somewhat more."[29] If innovation is good, why would a lot more not be better than just somewhat more? A lot more medical innovation? A lot more energy innovation? A lot more IT Innovation?

Despite the attempts to rehabilitate the Luddite project, most Luddites still deny that they are Luddites. As the writers of *No Tech Magazine* (which ironically is available online) claims "we believe in progress and technology." But at the same time they make it clear that "we refuse to assume that every problem has a high-tech solution," by which they really mean "we refuse to assume that most problems have a technological solution."[30]

In short, Ludditism is growing and this is a problem not only because it reduces support for innovation, but because Luddites increasingly attempt to use the power of government to throw sand in the gears of progress or to stop government from supporting progress, slowing technological transformation of society.

THE 2014 LUDDITE AWARD WINNERS

Innovators face many challenges. Reducing an idea to practice can be technically daunting, and securing the necessary funding can be a lethal hurdle. Good government policies can foster innovation, but it is not always recognized how severely discouraging bad policy can be, sometimes erecting insurmountable barriers to innovation and progress. From a rich slate of ill-considered anti innovation policies manifest around the world in 2014, we have selected ten that richly deserve opprobrium, presented in no particular order.

1. The National Rifle Association Opposes Smart Guns

From 2005 to 2010, almost 3,800 people died in the United States from unintentional shootings.[31] The majority of these people were under 24 years old, and most of these young people were shot accidently by someone their own age.[32] Often children will find a parent's gun and accidentally fire it.

Smart gun technology—firearms that can only be fired by authorized individuals—has been engineered to significantly reduce, if not outright eliminate, this risk. Smart guns use various technologies to verify the identity of users, such as sensors to check the user's fingerprints or a particular ring with an RDIF tag that is worn, or another proximity device to prove the user's identity prior to the gun being able to fire.[33]

So far, this technology has been difficult to acquire in the United States due principally to an intense counter-campaign launched by the National Rifle Association (NRA). When

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two gun shops—Engage Armament in Maryland and the Oak Tree Gun Club in California—tried to carry the first U.S. smart guns this year, NRA advocates protested fervently because they feared that the technology could be used to curtail their Second Amendment rights by limiting the kinds of guns they can buy in the future.[34] This vitriol was even marked by death threats against the gun dealers.

The NRA and gun advocates are perhaps worried about a New Jersey law that would only allow for smart handguns to be sold in New Jersey three years after being sold anyplace in the country. These advocates may also be worried that this law may spread to other pro-gun control states, thus taking away NRA member's freedom to own whatever gun they choose.[35] To be sure, these technologies are not without their problems such as reliance on battery power and biometric fingerprint accuracy of only 99.9 percent—in matters of life and death even a 1 in a thousand chance of failure is often considered too high.[36] However, by opposing smart gun sales in the United States and not allowing for the manufacturers to use that feedback to innovate and create newer, better smart guns, the NRA is taking a stand again innovation and child safety. Rather than protesting the mere sales of a new technology, the NRA should recognize the hypocrisy of a pro-gun group saying that a particular type of gun should be banned and allow innovation to proceed apace.

2. The Vermont Legislature Passes a Law Requiring GMO Food Labeling

Biotechnology is playing a critical role in enabling more sustainable and affordable food around the world. But in 2014, the Vermont state legislature passed legislation law to require mandatory "GMO" (geneticlaly modified organism) labels for foods derived from crops improved through biotechnology. Sponsored and pushed by an organic farmer legislator, proponents fanned the food fear flames to push the legislation, while taking special care to exempt products sold by important funders like Ben & Jerry's.[37]

Vermont politicians bought the lie being peddled by some organic food advocates that a mandatory GMO label is needed to provide consumers with "information" or "choice". Their real goal is about sticking a skull and crossbones stigmata on the safest, most efficiently produced, environmentally friendly foods in the history of agriculture as a back door way to grow the organic sector while stopping agricultural biotechnology.[38] Such classic hijacking of the political process in the service of both ideological and rent seeking Ludditism creates yet another avoidable deterrent to innovation in agriculture at a time when the rapidly growing world population can least afford such irrational indulgence.[39]

Such unwarranted hostility to innovations like "GM" foods moves the goalposts in the final minutes of the game. In a way that is powerfully discouraging for innovators it erects barriers to innovation for no good reason after daunting regulatory, technical and other challenges have been overcome. It is a public policy that hurts the majority to satisfy a small "back to the earth" privileged minority who can afford the luxury of organic foods.

In fact, consumers already have multiple paths to choice between "GM" and other foods in the marketplace: the USDA Organic Label, NonGMO project labels, even cell phone apps to scan barcodes and retrieve encyclopedic information on food while standing in the grocery store aisle. The FDA prohibits foods that are unsafe from being placed on the

market, and requires labels to tell consumers whenever a foods composition has been materially changed in any way relevant to health, safety, or nutrition. The bill would add nothing to the choices and information available to consumers already. It would, however, mislead and confuse consumers and lead to food producers not risking using GMOs, as intended. As predicted, the law was immediately challenged in court by food companies (the unjustly reviled "Monsatan" conspicuously absent from the list of plaintiffs, despite activist claims to the contrary) the law is certain to fail on any or all of multiple legal grounds. What a waste of taxpayer money.[40]

Of course, Vermont was not the only legislative body swayed by Luddite forces to oppose this life saving technology. The French government prohibited the use of GMO corn seeds.[41] Hungary not only banned GMO seeds but actually burned 1,000 acres of maize found to have been grown with GMO seeds.[42] And in India, a nation desperately in need of higher agricultural productivity, a number of states have refused permission trials of planting of transgenic hybrid mustard seeds, despite the Indian government's Genetic Engineering Appraisal Committee finding that they were safe.[43] Moreover, biotech opponents are perhaps the closest to the 19th century Luddites we have today in their willingness to engage in illegal actions, including property destruction, to achieve their Luddite goals. For example, 0ne scientific researcher experimenting with biotechnology that would allow cows to be born without horns (which would be humane for cows), would not reveal in an interview where his research is being done citing risk of sabotage by animal rights or anti-GMO activists.[44]

Vermont was not the only legislative body swayed by Luddite forces to oppose this promising technology (agricultural biotechnology).

3. Arizona, Michigan, New Jersey, and Texas Take Action to Prevent Tesla From Opening Stores to Sell Cars Directly to Consumers

Tesla Motor sells its product—a premium electric automobile—directly to customers, either online or in stores. Tesla believes operating its own stores rather than selling through third-party dealers is best because it has to both sell vehicles and promote a new technology. However, Tesla has been encountering many roadblocks to its business model all across the United States, where states' laws prohibit car manufacturers from operating their own dealerships. Over the years car dealers have succeeded in persuading state legislatures to pass a wide array of anti-consumer laws that protect car dealers at the expense of consumers.[45] According to the National Automobile Dealers Association, as of 2012, 48 states ban or limit the direct sales of automobiles by manufacturers.[46] This rule is not Tesla specific, as all car manufacturers in these states are prohibited from competing with dealerships that also sell their cars, both online and in stores.[47] For example, in the 1990s Ford was barred from selling its cars directly by the Texas government.[48] For the most part, Tesla has been able to skirt the direct to consumer prohibition because it does not compete with dealerships, none of which sell Tesla vehicles.

However, while many states have erected barriers to Tesla's physical locations some have allowed Tesla to operate with a limited number of retail centers. For example, both New York and Ohio have passed measures exempting Tesla from a ban on direct sales.[49] In other states, such as North Carolina, Tesla has won hard fought battles pushed by state auto dealers to make it illegal for Tesla to even send emails to potential customers in the state.[50] In Virginia, Tesla just won the right to open its first dealership.[51] In several other state

legislatures, such as Pennsylvania's, bills have been introduced to allow for direct Tesla sales.[52]

However, some states, acting with the support of bricks and mortar car dealers, have created barriers that Tesla cannot break through. A law in New Jersey prohibited Tesla from selling cars or even providing test drives from its showrooms a year after they started operation.[53] Arizona and Michigan have both also banned the sales of Tesla electric vehicles directly to consumers.[54] One of the worst offenders is Texas, where Tesla dealerships not only cannot sell their vehicles very easily, but must also jump through procedural hoops to even pitch them.[55] For example, Tesla store employees may not tell visitors the car's price, give them test drives, provide financing options, or even refer their customers to an out-of-state store.[56]

Not only do these laws inhibit competition, they result in an enormously inefficient and high-cost distribution system. Indeed, there are potentially huge savings in allowing car manufacturers to sell directly to consumers. For example, if consumers could go online to choose the car and the components they want (as many consumers do now when buying a computer), the industry could cut out billions of dollars in costs related to inventory and sales. One Yale University study found that the average customer using an online service to buy an auto pays approximately 2 percent less than someone buying in person from a dealer.[57] The savings would likely be even greater if consumers could go online and buy a car directly from the manufacturer. Doing so would dramatically reduce the costs associated with buying a car, including car dealer commissions and profits, and would reduce inventory costs as car companies would be able to produce more in response to actual consumer demands. For consumers, not only would they save money, but they would be able to better customize the exact features and extras they want on their car, all from the comfort of their home computer.

It is clear that these state laws are designed to protect franchise dealers at the expense innovation and competition. State lawmakers should look out for the best interests of consumers and overall productivity, not protect the business model of auto dealers. It is time to revisit rules that prohibit the direct sales of cars, both in stores and online, by manufacturers in the United States. Texas, Arizona, and New Jersey (amongst others) should lift their bans on direct to consumer sales. This would increase competition and efficiency, which will in turn lead to better consumer choice and high quality goods at the best prices.

4. The French Government Stops Amazon From Providing Free Shipping on Books

In July 2014, new legislation came into effect in France aimed at preserving French bookshops against competition from online booksellers such as Amazon and French retailer FNAC. The law bans combining the free delivery of books with existing legislation —the Lang Law—that allows book sellers to offer no more than a five percent discount on publisher prices.[58]

French small mom and pop bookshops have long sought measures to protect them from competition, beginning in 1981 when book discounts above five percent were banned to prevent big chains from using bulk orders to sell books more cheaply than smaller independent bookshops. And this law has had the desired effect: while both the UK and France have roughly the same population, France has 3,500 bookshops compared to just 1,000 in the United Kingdom, of which only about 700 are independent.[59]

Because of lower costs, some online book sellers can discount books even more than the five percent limit. In order to pass those lower costs along to consumers, and since they were prohibited from offering consumers even lower prices, some began to offer free shipping. However, the new French law dictates that online booksellers will be able to offer either a discount of up to five percent discount or free shipping, but not both.[60]

In a similar manner to some of the anti-U.S. technology sentiment floating around Europe right now—i.e., the Spanish "Google Tax"—the French "anti-Amazon tax" relies on creating excess, inefficient competition, which will prop up high-cost book sellers at the expense of higher quality and/or more efficient online ones.[61] This is by definition true, because if French book sellers were in fact providing a service of superior value, they would not need to rely on government to pass laws protecting them from competition. This policy allows weak book sellers to enter into or remain in a market, siphoning off sales from stronger technology-based firms, thereby diminishing their ability to reinvest in innovation. If French voters truly want to preserve small book stores one would assume that they would "vote with their feet" and choose to buy from them, which clearly policymakers and book stores worry that they will not do. But if policy makers still desire to preserve less efficient small books stores they should be transparent about this and provide direct taxpayer subsidies to them rather than burden more efficient e-commerce sellers.

5. "Stop Smart Meters" Seeks To Stop Innovation in Electric Meters and Cars

Electric smart meters are digital electric meters that use a small 1-watt radio which allows two-way communication between the customer and the utility, enabling both parties to review daily energy use and thankfully eliminating tens of thousands of jobs involving trooping door to door to read the dials on analog meters.[62] The devices have sparked anti-smart meter fears that consumers' health, safety, and privacy is at risk. Recently, this paranoia, which has been aided by the media coverage, has fueled efforts to derail smart meters expansion in many places, including Florida, Maryland, Michigan, Oklahoma and Ontario, Canada.[63] This opposition has been led by "Stop Smart Meters" (SSM), an organization committed to "advocacy, media outreach, and direct action network providing activism consultation and advice to dozens of local groups sprouting up who are fighting the wireless 'smart' meter assault" and to "defend your (old) analog meter."[64]

SSM and affiliated anti-smart meter groups believe wireless technology in all forms, including cell phones, smart meters, smart cars and others, is a health hazard because they believe that exposure to electromagnetic fields has the potential to cause a variety of adverse health outcomes.[65] Of course, they throw into the Luddite "pot" a host of other trumped up concerns, including inaccurate bills, loss of privacy, global warming, job loss, fires, and last but not least, the decline of democracy.[66] Surprisingly they do not appear to oppose

In a similar manner to some of the anti-U.S. technology sentiment floating around Europe right now— i.e., the Spanish "Google Tax"— the French "anti-Amazon tax" relies on creating excess, inefficient competition.

WiFi routers, despite the fact that they also give off radio-frequency energy. Perhaps, they see WiFi as just too convenient and useful to oppose.

However, according to the U.S. National Cancer Institute, there is no scientific evidence that radio-frequency energy can cause cancer.[67] Additionally, even if these radio fears were founded, which they are not, these groups' antipathy for smart meters makes little sense. Smart meters transmit an extremely weak signal. At a distance of 10 feet, a smart meter's signal is only about one one-thousandth as much as a typical cell phone (a person would have to have an electric meter inside his or her home for more than 1,000 years to get the same exposure that a cell phone produces in one month).[68] Additionally, based on years of studying the potential health effects of radio waves, the Federal Communications Commission (FCC) has adopted maximum permissible exposure limits for radio transmitters to make sure these technologies are safe, and smart meters fall well beneath it.[69]

Rather than banning mechanisms like Quality of Service differentiation, as Free Press and its allies seek, policy makers should instead of focus on the means of ensuring that differentiation is ubiquitous, productive, and standardized.

SSM and its affiliated groups are also concerned about their privacy when smart meters are installed on their property, to the point where one Texas woman brought out a gun when the local utility company tried to install a meter on her property.[70] (And it was also not a smart gun). To be sure, these technologies do gather personal information on the usage of utilities (as do analog meters), and this information needs to be protected. However, according to the Department of Energy (DOE) and the Smart Grid Consumer Collaborative, utilities have historically taken the job of protecting their customer's privacy very seriously.[71] Furthermore, the DOE is currently convening a multi-stakeholder process to develop a voluntary code of conduct for the privacy of smart grid technologies.[72]

Policymakers and members of the media should recognize that this anti-smart meter trend is nothing more than irrational hysteria, and should not let it reflect in policies that shape our smart grid. Smart meter technology support a smart grid, which can employ real-time monitoring system, can anticipate problems, and can rapidly isolate part of the network in the event of a failure.[73] This system will also allow utilities to charge consumers variable rates based on energy usage and shift heavy use of electricity to times of the day when demand is low, contributing to a reduced energy production and a cleaner environment. And by automating meter reader jobs, it boosts overall national productivity and living standards.

6. Free Press Opposes Smarter Broadband Networks

As the broadband Internet has begun to replace the single-purpose networks of the past—such as the telephone and cable networks—it needs to provide a better level of service for certain kinds of applications, especially latency sensitive ones like Internet telephony. Indeed, in order for broadband networks to be all things to all people, they need the versatility that only can be provided by the addition of smart management to raw bandwidth.

But under the banner of "net neutrality" a number of "public interest" groups, led in large part by Free Press, an advocacy group founded by Robert McChesney, a socialist committed to, in his own words, overthrowing the "capitalist system itself."[74] Free Press

campaigned vigorously in 2014 to convince the U.S. Federal Communications Commission to ban such smart network management, in large part by proposing that broadband Internet networks be regulated under the old Title II regime that regulated circuit-switched telephony in the days of monopoly. Under their campaign "Save the Internet" (more aptly titled "Freeze the Internet") Free Press has filed comments with the FCC, led campaigns to get others to do so, and organized an "Internet slowdown" day. Free Press and its allies want to freeze the state of technology in the core of the network and prevent any further network innovation.

Net neutrality refers to the notion that broadband networks should not discriminate (either in quality or price) among packets delivered on their networks. The proponents of strong net neutrality regulations (that would limit good network discrimination as well as bad) fear that the Internet's unique nature is under threat by the forces of incumbent broadband companies. If "Big Broadband" gets its way, neutralists fear that the Internet will go the way of cable TV, the "vast wasteland" where elitist programming such as *The Wire* competes with advertising-supported, populist programming such as *American Idol*. Supporters of net neutrality fervently believe that the Internet has always consisted of "dumb pipes" free of network operator management and that it must continue to be so organized in the future. Indeed, as Free Press has written, "A dumb pipe is exactly what we're after."[75] Free Press has a long history of using its advocacy to oppose any form of smart broadband networks.[76]

The anti-innovation net neutrality movement has real consequences for dampening innovation. To take just one example, venture-based GreenByte, a high tech start up from a Princeton University computer science professor which would have allowed variable data pricing on smart phones, went out of business because of the net neutrality opposition made it so difficult to sell his solution.[77] Locking in the Internet of today will mean a less vibrant Internet of tomorrow.

And this is all the more troubling because the reality is that the Internet was never a dumb pipe, it always allowed different types of traffic to be treated according to their needs. Indeed, as Dipankar Raychaudhuri, a professor of electrical and computer engineering at Rutgers states, "The Internet has never been entirely neutral."[78]

And today the Internet still needs substantial amounts of innovation—both in the core and on the edge—including better tools to manage networks to optimize performance, especially for latency-sensitive applications like two-way video communications such as Skype and Google Hangout.

In order for the Internet to replace the single-purpose networks of the past—such as the telephone and cable networks—it needs to provide a better level of service than a dumb network can offer. Application agnosticism (e.g., a dumb and neutral pipe_ is actually harmful to innovation: robbing the Internet of the ability to serve emerging applications effectively makes it less "open," not more. The Internet's openness, its value to innovators in particular and to liberal democracy generally, is greatly improved by the deployment of refined systems of management and economics operating under appropriate, technically-

and-economically-aware, regulatory oversight. As George Anders writes in *MIT Technology Review*, "Letting go of an obsession with net neutrality could free technologies to make online services even better."[79]

Moreover, building intelligence into a network alongside capacity doesn't limit its value to the community; it enhances it, providing it's done correctly. Rather than banning mechanisms like Quality of Service differentiation, as Free Press and its allies seek, policymakers should instead of focus on the means of ensuring that differentiation is ubiquitous, productive, and standardized while at the same time ensuring that broadband providers are not allowed to block or discriminate against lawful content.

7. New York State Cracks Down on Airbnb and its Hosts

The "sharing economy" is a person-to-person economic exchange system, where people share physical resources for a fee, which has sprung to prevalence in recent years. Items shared in this system include cars and homes. One of these services, Airbnb—the online service where tenants can use their living space for short term rentals—has seen tremendous growth in the last few years. In New York alone, Airbnb increased its number of rented rooms from 3,000 in 2010 to nearly 30,000 in 2014, making it the largest "hotel" in the city.[80] This year, revenue from Airbnb and its hosts are expected to exceed $282 million in New York.[81] The great economic advantage of Airbnb, and sharing in general, is that for the most part it adds to national economic output by enabling people to consume services that otherwise would have gone to waste (e.g. rooms that would otherwise be empty), avoiding the need to produce these services separately (e.g. build a new hotel).

Not surprisingly, the incumbent taxi industry has launched efforts to convince regulators to crack down on this technology-enabled competition.

However, New York's state government takes issue with the fact that Airbnb's hosts are not in the letter of the law a "hotel." In October, the New York State attorney general Eric Schneiderman released a report that said 72 percent of all Airbnb rentals in New York City are illegal.[82] This report was created from four years of data collected from Airbnb after a court fight.[83]

Schneiderman has announced that city regulators would be cracking down on "illegal hotels" by investigating violations of building and safety codes and tax regulations.[84] To be sure, the report showed that a dozen buildings had 60 percent of more of their units rented through Airbnb for at least half of a year, which suggests "de facto hotels."[85] In cracking down on violators of the current law, New York should focus on safety concerns rather than just prosecuting hosts who only want to share their home. However, this seems to not be the case as the city has a history of prosecuting "normal" occasional Airbnb hosts, asking for fines as high as $7,000.[86]

New York's intensely competitive real estate market has led to a myriad of rules governing every home, apartment, and hotel.[87] This convoluted system has generated confusion and a great deal of uncertainty surrounding sharing operations. A better solution was recently offered by San Francisco, which passed a law to legalize and regulate Airbnb and its hosts. The San Francisco law limits non-hosted rentals for up to 90 days per year, adds a tax structure, and creates a public registry for hosts.[88] Rather than prosecuting Airbnb and its hosts under rules that create uncertainty and limit the potential of the sharing economy,

New York should seek to move forward with sensible rules for living-space sharing that promote safety and protect hosts and consumers who want to be involved in the sharing economy.

8. Virginia and Nevada Take On Ride Sharing

Ride sharing applications, such as Uber, Lyft, and Sidecar, have snowballed to prominence in recent years throughout the United States and much of Europe. These sharing-economy-based, taxi-alternative services allow users to call cars to their location and use convenient payment methods that reduce the hassle of finding and paying for traditional taxis. In addition, passengers use an online tool to rate drivers on overall quality.

Not surprisingly, the incumbent taxi industry has launched efforts to convince regulators to crack down on this technology-enabled competition. And regulators across the nation have complied by erecting barriers to entry, asserting that these new entrants do not comply with the same regulations as their taxi counterparts (such as state authority, insurance requirements, etc.). Two governments have shown particular sympathy of taxi incumbents: Virginia and Nevada.

On June 6, the Virginia Department of Motor Vehicles (DMV), supported by groups that represent traditional taxi services, issued cease-and-desist letters to both Uber and Lyft.[89] Virginia DMV not only sent the letters, but also added that it would levy civil penalties against the drivers themselves if they continued to operate.[90] These were not the only fees that Virginia issued, as officials fined the companies more than $35,000 in civil penalties early in the year.[91] After months of escalating tensions, Virginia DMV reached a deal with ride sharing companies in August to allow the service to continue operating in the state.[92]

In Nevada a district court judge upheld the State's request to block Uber technologies from operating unregulated in November, because Uber refused "to comply with the necessary state licensing requirements" which put the public at risk.[93] Nevada's attorney general had previously filed with the court arguing that these Internet applications encroach on the rights of taxi companies who work under state oversight. Uber is being forced to temporarily suspend its services while it appeals in the Silver State.[94]

By standing in the way of these ride sharing applications, Virginia's DMV and Nevada's attorney general are slowing the pace of innovation in the sharing economy. These states should recognize that ride-sharing systems often mimic the consumer protections that traditionally needed a government arbitrator. For example, Uber's user rating system allows users and drivers alike to rate each other, which helps self-regulate the system and weed out bad actors, while promoting consumer well-being. Additionally, the rideshare company acts as the middleman between the user and the driver, issuing background checks, checking insurance, and booting bad drivers off of its application. All of this resembles the protections enabled by Arizona's and Virginia's original taxi cab laws. Before targeting rideshare for violating the letter of the law, these states should assess whether the company's practices meet it in spirit, and work with the companies to mitigate any additional harms.

9. The Media and Pundits Claim "Robots" Are Killing Jobs

The original Luddites destroyed mechanized looms that threatened their jobs as weavers. But at least they never argued that mechanized looms would mean fewer overall jobs in Britain. Two hundred years later, the dominant narrative around technology is that it is leading to fewer jobs overall.

Indeed, expert pundits have now sounded the alarm, scapegoating technological change for our current unemployment situation and claiming it will only get worse. Earlier in 2014 Paul Krugman wrote: "Today, however, a much darker picture of the effects of technology on labor is emerging. In this picture, highly educated workers are as likely as less educated workers to find themselves displaced and devalued, and pushing for more education may create as many problems as it solves."[95] MIT professors Erik Brynjolfsson and Andrew McAfee write that "Offshoring is often only a way station on the road to automation. In more and more domains, the most cost-effective source of 'labor' is becoming intelligent and flexible machines as opposed to low-wage humans in other countries.[96] In in pure Luddite tradition, financial pundit Nouriel Roubini entitles his blog "Rise of the Machines, Downfall of the Economy," writing that "a massive technological revolution will sharply reduce jobs over time.[97] Lawrence H. Summers, the former Treasury secretary, recently stated that he no longer believed that automation would always create new jobs. "This isn't some hypothetical future possibility," he said. "This is something that's emerging before us right now."[98]

This narrative has taken hold to such a degree that nearly half (48 percent) of the 1,896 experts surveyed in a recent Pew report believed that technology would destroy more jobs that in creates by 2025.[99] Not surprisingly given this shift in elite, expert opinion toward Ludditism, the media has joined in for the ride. When a publication like *The Economist*, which for long has stood with progress, has its cover story on the "Third Great Wave" of automation, and writes "Whether the digital revolution will bring mass job creation to make up for its mass job destruction remains to be seen" and that the digital revolution is bringing "the global eclipse of labor" you know that Luddite thinking has become endemic in the West.[100] The fact that the recent YouTube video "Humans Need Not Apply," which argues that "all human talent" will be displaced by machines producing a "terrifying amount of automation", has gone viral, getting more 3 million views, is further evidence.

The problem is that blaming technology for job loss is not only wrong, but it encourages policy makers to take steps to limit technology. As we explain in the ITIF report "Are Robots Taking our Jobs, or Making Them?", the scholarly economic evidence is unambiguous: in the medium to long-term (e.g., over three years) there is no negative relationship between productivity growth and job growth. The reason is that while some jobs may disappear if organizations use technology to become more productive, there is a second-order effect that these neo-Luddites miss: new technology boosts productivity which in turn cuts costs and those savings for consumers are not put under a mattress, they are recycled by more spending for additional goods and services which in turn creates other jobs. As technological advancement increases our ability to produce more with less, it means we will consume more (more vacations, more restaurant meals, more education, bigger houses – the list can go on and on) and that consumption will create jobs. As long as

there are people willing to work (and a reasonable business climate) there will always be jobs for them to do (leaving aside short-term business cycle fluctuations).

Making technology a scapegoat for unemployment is dangerous because, as an incorrect reading of how innovation and technology affect the economy, it can lead us to dangerous policy conclusions. Technology does not simply progress automatically, not even in perfectly competitive markets. It needs support from government. Fear-mongering stories about robots stealing jobs scare us away from supporting the necessary public investments and setting the right policies, including tax policy, for higher productivity.

Indeed, we would all do well to heed the advice of this economist:

> Instead of running away from robots and other more productive technologies, both policymakers and the public need to recognize that it is only by increasing our productivity that we can maintain international competitiveness and increase our per capita income. When we start to fear the objects of our advancement we end up trapped by our fear, defending ourselves from the very thing that can help our economy move forward.[101]

When Robert Solow wrote this in 1962 he was speaking for the vast majority of American elite opinion. If Solow wrote the same thing today, alas he would likely be in the minority and definitely wouldn't get to make a TED talk.

10. The Electronic Frontier Foundation Opposes Health IT

Electronic medical records and other information technology innovations hold the promise to improve the quality and cut the cost of health care. Unfortunately, the Electronic Frontier Foundation (EFF), a nonprofit advocacy organization dedicated to defending civil liberties, including privacy and free expression, in the digital world, launched a major campaign in 2014 to demonize electronic medical records and convince policy makers to limit their use.[102] According to EFF, the push to digitize patients' medical records have left them "vulnerable to exposure and abuse", a mischaracterization of the current state of affairs that also overlooks the important benefits offered by health information technology (IT).[103]

As with many technology innovation issues today, Luddite opposition comes from the far left and far right. Conservative talk radio host Tammy Bruce writes about federal legislation providing incentives for recalcitrant U.S. doctors to enter the 21st century, that:

> The HITECH Act requires physicians and hospitals, under financial penalties, to transfer your secure paper-based medical records to an "electronic" system, i.e., the Internet….What this really does is remove the privacy and control in your relationship with your doctor by removing your records from their office file cabinet and dumping them into the Internet "cloud" where everyone and anyone can access them.[104]

These arguments fail to note that paper records are almost always more exposed than electronic health records. The greatest threat to personal privacy is not online hackers, but

health care workers abusing their privileges. If a person breaks into a filing cabinet, he or she can take an entire folder, copy it, and replace it without drawing attention. On the other hand, an administrator can audit access to electronic health records to see who looked at the records, when they were accessed, and if copies were made. Physical copies do not have the same transparency and accountability structure. For example, when workers at the hospital where TV personality Kim Kardashian gave birth to her daughter hacked her digital health records, the hospital was able to find and discipline those transgressors.[105]

Health IT is about more than just going paperless in your local doctor's office, it's about fundamentally transforming the health care system by allowing both doctors and patients to have access to information and tools that allow them to better manage their care, improve quality, and cut costs. Furthermore, digitized heath records and patient-generated health data are not only enormously valuable in clinical settings, but also can be used for applications such as enabling telemedicine and helping first responders treat patients more effectively in the event of an emergency.[106] Additionally, this information can be effectively de-identified prior to clinicians and third-parties gaining access to it.[107] And analysis of this de-identified data holds great promise in enabling needed health care discoveries. Rather than citing hyperbolic harms that are hypothetical, EFF should stop opposing technology that is saving lives every day and recognize the enormous benefits afforded by this technology and help to speed its deployment.

CONCLUSION

Ludditism is not going the way of the hand loom anytime soon. Too many economic interests have a stake in the status quo; too many advocates have a stake in gaining supporters by fanning the flames of fear and too many pundits depend on the Luddite narrative to place their op-eds and get the well-paid speaking gigs. But while we can't stop the Luddites from engaging in their anti-progress, anti-innovation activities, we can recognize them for what they are: actions and ideas that are profoundly anti-progress, that if followed would mean a our children will live lives as adults nowhere near as good as the lives they could live if we instead embraced, rather than fought innovation.

But while we can't stop the Luddites from engaging in their anti-progress, anti-innovation activities, we can recognize them for what they are: actions and ideas that are profoundly anti-progress.

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ABOUT THE AUTHOR

Dr. Robert Atkinson is the president and founder of the Information Technology and Innovation Foundation. He is also the author of the books *Innovation Economics: The Race for Global Advantage* (Yale University Press, September 2012) and *The Past and Future of America's Economy: Long Waves of Innovation that Power Cycles of Growth* (Edward Elgar, 2005). Dr. Atkinson received his Ph.D. in City and Regional Planning from the University of North Carolina at Chapel Hill in 1989.

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