

No, smartphones aren't that innovative: Why pay is lagging

February 25 2016, by Christopher S. Rugaber



In this March 16, 2015, photo, provided by Robert J. Gordon, Gordon poses for a photo in his home office, in Evanston, Ill. The smartphones, tablets and other high-tech gadgets we've grown to embrace pale beside the transformative

innovations that emerged between 1870 and 1970—a "special century," Gordon writes in his book "The Rise and Fall of American Growth." During that earlier period, standards of living soared, thanks to such epochal breakthroughs as electric light, indoor plumbing, the automobile, radio, the telephone and air travel. (Julie P. Gordon/Courtesy of Robert J. Gordon via AP)

It's a dreary thought. America's most innovative days are gone. A lack of truly groundbreaking inventions has imposed a long-term drag on economic growth—and with it the prospect of meaningful pay raises for most of us.

That, at least, is the argument put forth in a provocative new book by Robert Gordon, an economist at Northwestern University.

The smartphones, tablets and other high-tech gadgets we've grown to embrace pale beside the transformative innovations that emerged between 1870 and 1970—a "special century," Gordon writes in "The Rise and Fall of American Growth." During that earlier period, standards of living soared, thanks to such epochal breakthroughs as electric light, indoor plumbing, the automobile, radio, the telephone and air travel.

Those innovations raised wages and economic growth by increasing what economists call productivity—the output that workers produce, on average, per hour. When productivity rises, it means workers have grown more efficient. Employers can then pay them more without having to raise prices for customers.

Yet in the past decade, U.S. wages, growth and productivity have all languished. One result is that frustrated Americans have flocked to the insurgent presidential campaigns of Republican Donald Trump and Democratic Sen. Bernie Sanders, who promise better times for ordinary

workers.

In response, Gordon contends that any benefits that flow from future innovations will likely be offset by other factors—from an aging population and widening income inequality to a leveling off of college graduation rates.

In a phone interview, Gordon highlighted the innovations he himself used to help write his book, pointed to the limitations of today's technology—from smartphones to [driverless cars](#)— and called for increased immigration.

The interview has been edited for length and clarity:

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Q. It's hard to predict technological progress. Why do you feel sure that transformative innovations won't deliver economic benefits anytime soon?

A. Human life involves many different dimensions, and we've pretty much reached a plateau in such basic human needs as food and clothing. We've had a plateau in transportation speeds: We're not driving any faster. In fact, we're usually driving slower than we were 50 years ago. We're making no faster speed in the air than we were 50 years ago.

When you check out in the supermarket, you have bar-code scanning, and you have instant credit card authorization. When you get money, you get it out of the cash machine, which is a form of robot that makes it unnecessary to walk inside a bank.

Many of these things have been revolutionary, but they were pretty much already completed about 10 years ago. That's the reason I expect

[productivity growth](#) is going to be slower. There are just so many dimensions of human life where we seem to have reached a plateau in innovation.

Q. You predict that [economic growth](#), which averaged roughly 3 percent a year for most of the post-World War II period to the Great Recession, will be roughly half that level over the next 25 years. Will Americans adjust to that?

A. We're seeing Americans already getting used to slower growth. We have a younger generation where unprecedented numbers are still living at home. The age of marriage is going up. The age at which people set up their own households is going up.

All those are symptoms of the general phenomenon that this generation of young people will be the first not to be substantially better off than the standard of living of their parents.

Q. Your book documents how much innovation boosted living standards. It suggests that Americans have a good track record at invention. Doesn't that provide hope it will continue?

A. There was simply a greater opportunity to invent in 1870. We had the telegraph, and so minds were concentrated on how to squeeze a [human voice](#) into a telegraph line. And soon after, Alexander Graham Bell narrowly beat out a competitor named Elisha Grey, in the long-desired invention of the telephone, putting the human voice on a wire and ending much of human isolation.

The invention of the [internal combustion engine](#) opened the opportunity to achieve man's dream of flight, because unlike the steam engine, it was light enough to propel a set of wings fast enough to fly off the ground. Soon, the aviation industry was born.

The internal combustion engine made possible a new set of industries. Personal travel, motels, supermarkets, a large-scale retailing environment in place of small stores where you had to shop every day.

Many of the opportunities of the third industrial revolution, which is computers and digitalization, were there for the picking back in 1970 and 1980. We made enormous progress converting from paper and file cabinets to the modern world of word processing and search engines.

The lack of progress (since then) is palpable. Everywhere I go, I see technology doing almost exactly what it was doing 10 years ago. Receptionists sitting in front of flat screens, making appointments, just identical to what was happening 10 years ago.

Q. As you note in your book, many of the inventions in the special century took as long as five decades to reach their full potential. Since the iPhone was introduced in 2007, isn't it too early to say that smartphones aren't transformative?

A. I think the potential of smartphones has played out very rapidly. We're still at the dawn of payment systems based on the smartphone. We may 10 years from now look back and marvel at the fact that people had to pull credit cards out of their wallet.

But remember, the entire decade of the rollout of the smartphone and all the applications have not caused productivity growth to budge. There are

many people who think we're missing the benefits of the smartphone in our measures of productivity and GDP. But we've always missed the benefits of new inventions.

Economic growth has always been understated. But the degree of understatement was more important in the past, because the innovations were more transformative to every aspect of human life.

Q. Your book is so packed with historical detail, it's hard to imagine anyone being able to write this book in the 1960s, because they couldn't access all that information.

A. Oh, nonsense. This book was written the old-fashioned way. It was written with stacks of books taken out of the library. The only modern invention that was involved in writing this book, besides the word processor, was Post-Its stuffed in the books to flag important passages. There was very little reliance on the Internet in the writing of the book.

Q. What about innovations on the horizon? Aren't driverless cars potentially a significant transformation?

A. We have a fleet of 200 million cars that require drivers. So all of the futurologists who praise the potential safety benefits of driverless cars are talking about a world that's far away, when all of our 200 million non-driverless cars are replaced by autonomous cars. That's going to take a long time.

When you think about most of the truck drivers you see, each has a dual job—not only of conducting the vehicle to the desired destination but of

unloading it. All of that would still be done by humans, even if the truck could drive itself. Also, before we become too enthusiastic, driverless cars have been shown to degrade their performance in snow and rain. They are still not capable of navigating at night on rural roads without clear markings for the sensors to pick up.

Q. But that sounds like the way you write about the car itself when it was first invented: They didn't have tops; you had to use hand cranks. Again, previous inventions took a long time to play out.

A. One thing I am very careful about in the book is not to predict anything beyond the next 25 years. I think it's pretty safe to say that it's going to take a lot longer than 25 years to make a complete transformation from our existing fleet of hundreds of millions of vehicles to an entirely driverless fleet.

Q. Many people think their wages would go up if we restricted immigration. Is that a recommendation of yours?

A. No. What's great about immigration is that it is the most potent antidote to our aging population. Immigrants come in, and they're young. Those immigrant workers will be the source of financing for Social Security and Medicare. The more immigration, the better.

Remember that from the Civil War to World War I, there were no passports. Anybody could come to the United States who could pass a rudimentary health exam. We had 30 million people added to a population which in 1870 was only 40 million people. We nearly doubled the population in 30 to 40 years. There was not mass

unemployment.

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Q. How do you see the economy performing in the next few years?

A. We're going to have a better economy in the next few years than we've had in the last five years, just because our unemployment rate is going to be historically low.

And so it's going to be easier for people over the next two years to change jobs, to better their situations, to quit jobs they find unsatisfactory. There's going to be upward pressure on wages. And some of this wage stagnation is going to be ameliorated.

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Citation: No, smartphones aren't that innovative: Why pay is lagging (2016, February 25)
retrieved 25 April 2024 from <https://phys.org/news/2016-02-smartphones-lagging.html>

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