

The Greatest Innovations of All Time

Larry Keeley of Doblin Inc. nominates the innovations that have most improved safety, living standards, and quality of life. His choices may surprise.

Here's a good game to play with your pals: Ask them to name the most important innovations ever. Depending on the average age of the people with whom you try this trick, you are likely to get airplanes, cars, Google, iPods, and similar usual suspects. Smart alecks will cite the Pet Rock, of course. But if you can keep the conversation going a while, the exercise is incredibly instructive. What you will soon discover is that you need some basis for deciding what makes an innovation important.

Should our measure be revenues? Then the answer is likely to be mortgages or, more generally, debt. Perhaps profitability is key? Then we have to be talking about refined oil. Customers served? Then McDonald's burgers would feature prominently. In many respects it is this underlying logic that becomes the valuable part of the puzzle.

From guns to container ships

But suppose we get past these coarse commercial measures to cast our net in a more expansive way. Let us consider important innovations to be those that most changed peoples' lives. Now you have to consider which innovations materially improved safety, standard of living, quality of life, and longevity.

Using this logic, innovation planners at Doblin believe we can defend this list of all-time-great innovations, including the ordinal ranking shown here:

1. Weapons
2. Mathematics and the number zero
3. Money
4. Printing
5. Free markets and capital markets
6. Domesticated animals and agriculture
7. Property ownership
8. Limited liability
9. Participatory democracy
10. Anesthetics and surgery
11. Vaccines and antibiotics
12. Semiconductors
13. The Internet
14. Genetic sequencing
15. Containerized shipping.

You may well disagree with these selections--indeed I hope you will. (The game only gets interesting when smart people take a stand and defend their own points of view.) So let's get some comments flying to pick those fights. For the moment I would rather note how very surprising this list is and to try to understand the lessons it offers to anyone who wants to innovate today.

Homesteading

Start with a look at select individual innovations included here. Weapons at No. 1, for instance--Isn't that just too depressing for words? Well, of course it is--especially to pacifist liberals like me. Still, love 'em or hate 'em, weapons have changed the planet. Initially they changed what we eat. Later they changed the balance of power. Mostly they have contributed to understood, stable, and accepted political boundaries, without which territorial disputes would be incessant and life threatening.

Or take up the interesting little oddity, property ownership, which makes the list at No. 7. How can this possibly be a great innovation? Simple enough: Once people own property, they can use the wealth they accumulate to try something else. This has the effect of raising the standard of living for everyone.

Still not persuaded? Consider the megacity of Mumbai, where fully half of the 12 million residents are squatters. In this and other shantytowns all over the world, there is no one thing you could do to increase the standard of living faster than to simply give people a deed to the places they've already staked out. Suddenly they have a little bit of "wealth" that they can use to generate a very small amount of capital and start a business or buy something that must be made by

someone with a job. This was the logic behind the U.S. Homestead Act (1862) that allowed anyone to claim up to 160 acres of land. After clearing and working the land for five years, the homesteader would receive title to the land from the government--and this is how we settled the West.

No products

Another odd duck makes the list at No. 8: limited liability. What kind of nutty item is this? As far as I am concerned the real issue here is that it may deserve a much higher ranking, perhaps as high as No. 3. Limited liability is the core notion behind what it means to have a corporation or a "limited" partnership, and it means that individuals don't personally risk everything when their companies make a mistake. Following the collapse of the dot-com companies early this century, a large number of high-ranking economic officials visited from Russia. What they wanted to know most was: How many executives were put in jail in Silicon Valley after their companies went bust? When the answer was none, they were stunned. More to the point, it was completely inconceivable that those same individuals would be in demand to run well-financed companies again soon--largely because of the presumption that they had learned from their experience.

Genetic sequencing at No. 14 is a bit of a stretch--it hasn't yet proven its value, though most theorists believe it will eventually be the key to preventative medicine and longevity. Containerized shipping is not obvious, either. But nothing in the course of humanity has done more to make goods accessible and affordable, and it has helped to streamline the global supply chain. Still, the most important lesson for would-be innovators here only comes clear if you look at the list as a whole, not at the individual items. If you squint at these innovations just right, you discover that none of them is a product--not a single one. Yet when you stick smart people in a room and ask them to innovate, they will virtually always brainstorm new product ideas. We seem to be hardwired to focus on precisely the wrong place when it comes time to innovate.

Platforms

Instead our focus should be on platforms: broad capabilities that have the potential to cut across industries, markets, and applications. Platforms often have some proprietary capability at the core, but not always. Indeed, it is common for platforms to integrate many otherwise ordinary ideas into a whole that is collectively remarkable--as is the case with most of the innovations on the list, and the reason they go beyond mere inventions.

In this way, platforms have big ambitions. They take something hard to do and make it routine, affordable, and robust. As the famous science fiction writer Arthur C. Clarke used to say: "A sufficiently advanced technology is indistinguishable from magic."

So look closely at the list of 15 top innovations of all time. What you will notice is that every single one of them is a platform. They transcend enterprises, industries, and political borders. They had the power to change the world. And so can your own innovations--as soon as you learn to think of them as platforms, not products, and expect them to be big enough to change peoples' lives. Then you're cooking.

Source: Larry Keely/ *Business Week*, February 16, 2007

This Week's Assignment

On the article

1. Mark any confusion in the text.
2. Annotate to show your thinking

In Your Writer's Notebook

1. Identify which innovation you believe is most important and write a defense of your selection in your notebook. Your response should be multi-paragraphed. Minimum of one page.