

PING The Risk of Innovation: Will Anyone Embrace It?



Illustration by The New York Times

By G. PASCAL ZACHARY Published: January 20, 2008

THE Prius has become one of the hottest cars in America — an amazing development, because this hybrid-electric car requires some rather large changes in how people behave.

I learned the need for Prius-style adaptation early this month, when I rented a Prius from Budget Rent A Car in Seattle. Much to my embarrassment, I couldn't get it to go forward. Once I got going and arrived at my destination, I couldn't figure out how to put it in reverse.

Fortunately, another Prius owner on the premises — they seem to be everywhere these days — gave me a quick lesson. You start the Prius by pressing a button on the dashboard, not once but twice. To put it in drive or reverse, you manipulate a very small stick protruding from the dashboard.

The next morning, I awoke before dawn and started the Prius, but no matter how many times I pressed the button, I couldn't get it to move. I finally called Budget roadside assistance, and a polite man talked me back from my private technology disaster. It turns out that I had failed to tap the brake while moving the gear shifter in a certain inexplicable way.

I don't think I can adapt to the behaviors required by the Prius. But thousands of people

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are, and [Toyota](#), its maker, is reaping the benefits.

Whether humans will embrace or resist an innovation is the billion-dollar question facing designers of novel products and services. Why do people adapt to some new technologies and not to others? Fortunes are made and lost on the answer.

Great innovations have foundered over human stubbornness. Consider the Picturephone, trumpeted by [AT&T](#) at the New York World's Fair in 1964 as a major technological advance. Engineers reasoned that if hearing someone's voice over the phone was terrific, wouldn't seeing a face be even better?

Consumers didn't think so. AT&T's Picturephone, which would have added around \$90 to a person's monthly phone bill in 1974, a huge amount for the time, "was superfluous, adding little information to voice alone, especially considering its high price," said Kenneth Lipartito, a professor of history at Florida International University.

Even today, when adding video to a phone is a trivial cost, consumers may rebel. Video-conferencing often remains an activity forced on people by their employers.

Resistance to technology is an omnipresent risk for every innovator. Even a device as fabulously freeing as the personal computer struck some people as an abomination. In 1990, the poet Wendell Berry famously declared his perpetual allegiance to the typewriter in his essay, "Why I Am Not Going to Buy a Computer."

Few people joined him, however, a reminder that rejection isn't the real specter facing new gear. Adaptable humans usually trade one technology for another, rather than reject any and all. To be accepted, innovations must deliver benefits — enough benefits to make change worthwhile.

"As consumers we're constantly asking ourselves, where do we draw the line? How far do we go?" says Mitchell Kapor, chairman of the Open Source Applications Foundation in San Francisco.

Businesses crave a sweet spot: where the line is drawn in favor of the innovator. The late Akio Morita, founder of [Sony](#), talked about satisfying appetites that people didn't even know they had. He achieved such a feat with the Sony Walkman, the music player introduced in 1979. While at the Lotus Development Corporation, Mr. Kapor created another such "killer app," or application: the spreadsheet for the PC.

Killer apps are sought-after innovations because people get addicted to them and make behavioral changes that might otherwise be unthinkable. "Those who benefit from a technology adapt to its constraints and become dependent on it," says John Staudenmaier, editor of the journal Technology and Culture and a historian of technology at the University of Detroit Mercy.

Dependency drives profits, the ultimate arbiter — for some — of an innovation's success. Look how [Apple](#) has converted the mania for the [iPod](#) into record profits — and a record stock price.

iPod "addiction" seems benign. Yet some worry that other innovations may harbor health threats. As a result, they may be vulnerable to what Marc Ventresca, a lecturer at the Saïd Business School at Oxford, calls the "frog boiling" problem. For the frog, gradually rising heat causes no alarm — until the water is so hot that death is imminent.

"Adaptation can sometimes be dangerous, but the hazard isn't apparent until it is 'too late,'" Mr. Ventresca says.



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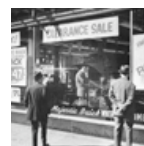
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While people may be fearful of allowing a seductive technology to imperil them — the “Frankenstein effect” — they may also fear the consequences of not changing their ways. As the case of [climate change](#) illustrates, many consumers are enthusiastic about changing their behavior — in this case, the way they drive cars — if they believe that by adapting to new technologies they will save themselves and the planet. Think of the Prius again.

FOR technological innovators, the cash register can ring either way. They may achieve a smash-hit breakthrough, or simply make a slight improvement in a technology that humans already feel comfortable with. Most innovators no longer even try to predict human reactions to their creations.

Henry Kressel, a partner at Warburg Pincus and a co-author of “Competing for the Future: How Digital Innovations Are Changing the World,” says, “You throw technologies into the market and see what sticks.”

The hope is that passionate “early adopters” will blaze a path toward mass acceptance of a new technology. Yet the truth is that no one can tell in advance which innovations people will adapt to and which will become the next example of the Picturephone.

Where people draw the line can be known only after the fact. Which is why innovation is always a risky — even humbling — business.

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