Innovation and emerging tech: Let the best idea win

Ask not what new technology can do for you but why you think you need it
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May 6, 2020

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Do you ever feel like you can't keep up with how fast technology is changing? Like you've arrived late to the tech party? If so, I'm here to tell you that you're not alone, and you're not late. It's easy to lose sight of the big picture and long-term trends. We have to stop and ask ourselves not just whether any given technology is ready for prime time, but if we're ready for that technology. Now is the perfect time to slow down and plan for the future we want, rather than continuing to simply react to and accommodate new technologies as they arrive.

What typically holds back innovations isn't the technology itself but rather the absence of belief that a new reality is possible. The best new technologies will eventually become ubiquitous even without our help, but it can take decades. We also need to consider which old or underutilized technologies should be promoted or resurrected—and why.

Want more information on utility technology-transfer efforts?

Watch the recording of our recent web conference ET for The what and why of technology transfer: Redefining success to meet today's challenges. During the event, we discussed environments that nurture innovation and how utilities are fostering them.

As innovation leads to new technologies, the old technologies die and get replaced by the new ones in a continuous process, right (**figure 1**)? Actually, technology evolution occurs in a series of recursive feedback loops. Technologies don't ever really die. Even those that currently seem obsolete can be resurrected. Why does this matter? Because the choice of which technologies will thrive is up to us. Old, seemingly obsolete technologies can birth breakthrough ideas at any time. The most powerful question to ask isn't What technologies are ready for market? but Why are we promoting this technology?

Figure 1: Technology evolution seems to follow a simple progression, but it doesn't

While it's easy to think about technology evolution as occurring in a simple, linear progression—shown here with the evolution of the phone—in reality, every technology undergoes development cycles that are anything but simple and linear.

Source: iStock

Don't fall for the cult of newness

Just because something is new doesn't make it best in class, or even necessarily a good thing. However, thanks to our biases in today's society, we prefer newer information, technologies, and trends. I call this the cult of newness, but others have also observed our society's obsession with novelty.

An irrational preference for older ideas is called a conservatism bias, but there's no equivalent label for an irrational exuberance for new ideas. Rather, those who don't embrace new ideas and technologies with open arms risk being labeled as Luddites, antiprogressives, or worse. This bias is most evident in the tech industry. Consider this quote from Satya Nadella, head of Microsoft, on February 4, 2014—his first day as CEO:

> Our industry does not respect tradition—it only respects innovation.

I can't even count how many times people have asked me to provide a list of the newest technologies I've come across. But only rarely does anyone ask, What are the best underutilized technologies, and why aren't they utilized? even though that's a more valuable question.

We can point to lots of old ideas that eventually became key enabling technologies once the timing was right. Take touch screens, for example. This key enabling technology is now ubiquitous in our digitized world. That technology was invented in the mid-1960s and was dismissed as unusable. Technology experts at the time couldn't believe that the human finger—with its low-resolution, visually obstructing, greasy-grimy tendencies—would ever become a preferred method for navigating and operating a computer. It took nearly 40 years for that idea to find a commercial application that took hold.

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Let's consider a couple of other key inventions that seem very modern today: audio navigation systems and street-level imaging. Google's Maps Street View and navigation applications actively commercialized and paired these technologies in 2007. But the ideas and fundamental capabilities existed long before Google. In 1978, Nicholas Negroponte and his team at the Massachusetts Institute of Technology (MIT) Architecture Machine Group (later the MIT Media Lab) developed the Aspen Movie Map using technology that looked like an early Google Street View car. In the 1980s, one of

Negroponte's PhD students developed a new technology called Backseat Driver that used vehicle-integrated GPS to provide audio navigational instructions to the driver. The MIT Patent Office told Negroponte not to patent this navigational technology because it thought nobody would use it and it would be a liability for the university.

Just about any technology that's ever been invented is still accessible today. In many cases, they're still produced new in factories or by hand. Even when technologies are replaced by something better or banned outright by governments, they may be delayed or decrease in popularity, but they never disappear entirely. For more examples and a great discussion of this phenomenon, check out Kevin Kelly's TED Talk How Technology Evolves. I agree with Kelly's assertion: the best way to steer technology is to embrace it, but there's no good reason to embrace only new technologies. A better approach is finding ways to combine old and new technologies to deliver optimal solutions.

Make sure the best idea wins

A popular approach to screenwriting is called "the best idea wins." It's simple: no matter who comes up with a new skit, gag, punch line, or plot twist, if it's the best idea, then it gets used in the scene. Period. The director's ideas aren't assumed to be inherently better or more valuable than those of the lighting technician or stage grip, let alone the producer or anyone on the writing staff. Another name for this strategy is idea meritocracy.

So what does screenwriting have to do with technology development and innovation at utilities? Idea meritocracies aren't just gaining popularity in the entertainment industry. We've seen a growing number of reports from businesses in different sectors claiming great success when embracing a culture where the best idea wins.

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Consider the advice of Bridgewater Investment's founder Ray Dalio. In the Fast Company article Hedge fund guru Ray Dalio: Invest in idea meritocracy, Dalio says that creating an idea meritocracy in your company requires bravery and candor among employees and a commitment to the process by management. Fostering a culture of thoughtful disagreement will give companies a competitive advantage in the marketplace.

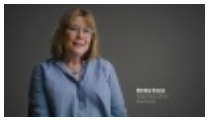
It isn't enough to agree that, in theory, the best idea should win. Businesses have to invest time, money, and attention to create a workplace where every employee is supported and has the opportunity to share their ideas with a management team that's open and listening. This requires breaking down siloes, aligning teams and budgets, and adopting and integrating powerful business technologies.

And this all applies to energy utilities, too. Watch Martha Brown, portal product owner at Duke Energy, talk about how the utility is taking steps in this direction (**figure 2**). You can listen to her entire E Source Forum presentation in the January 22, 2019, episode of the E Source Podcast.

Figure 2: For the best idea to truly win, every employee must be heard

In this video, Martha Brown talks about how Duke Energy is investing in powerful new employee engagement technologies that connect employees and encourage ideas from every level of the company.

This gives the best ideas a better chance of floating to the top.



In screenwriting, the best idea is simply the one that gets the best audience response, but how do you decide what emerging technology idea is best? Utilities need new performance metrics.

One utility making serious investments to show its commitment to a best-idea-wins business ethic is Southern California Edison (SCE). The utility created the SCE IDEAs portal, and it has invited anyone, from employees to customers to vendors or even people living outside SCE's territory, to submit their ideas for SCE executives to consider.

A team within SCE works closely with internal programming and engineering teams to quickly evaluate the viability of idea submissions. Every week, the team meets with senior management to review promising submissions and consider next steps. Daljit Singh, a program manager for the IDEAs initiative, regularly turns to E Source to help his team quickly vet new ideas for emerging technology and program measures.

Rethink where good ideas come from

Before you can create a new business model that works, you need to understand what kinds of environmental conditions foster creativity, nurture innovation, and lead to the evolution of good ideas and valuable solutions. Innovative ideas are born through a magical and mysterious alchemy of hard work and cleverness that's unpredictable and difficult to replicate. Yet we do have some clues about how ideas are nurtured into existence. The problem is, surprisingly, that environments in which innovations can thrive are currently somewhat rare.

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Innovating isn't easy, and it seems that we're not getting any better at it. In fact, innovation is becoming more difficult and more expensive over time. There's evidence suggesting that businesses are getting less value out of their research and development (R&D) investments. You can read more about this trend in the Vox article Ideas aren't running out, but they are getting more expensive to find.

So what's causing this downward trend in R&D performance? There are many possible reasons, but I think the two biggest factors holding us back are:

- The problems we're facing are bigger and more challenging than ever and require the development and integration of more-complex solutions.
- The environments we've created for addressing today's challenges are mostly closed and proprietary and aren't the most effective for nurturing big innovations.

Consider the first reason: the problems we face today are larger and more challenging than those we grappled with in the past. For a concise summary of this issue, see Hod Fleishman's Forbes article Why It's Becoming Harder to Innovate, and 2 Things to Make Innovation Easier. He suggests that the biggest hurdle standing in the way of innovation is a problem of belief. If you see a problem and don't believe that it's an opportunity for new solutions, you can't innovate your way out of it.

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Now let's consider the second reason: the environments we've created to develop the technologies that can address today's problems aren't conducive to innovation. Historically, we've promoted competitive

environments through capitalist markets, and proprietary technology development through patented protection of new ideas.

While proprietary development has its place, there's a growing body of evidence suggesting that our overemphasis on competition and private ownership of novel ideas is stifling innovation and technological competitiveness, leading to R&D investments that are less cost-effective over time.

So, what's the most nurturing environment for innovation and the development of good ideas? Popular science author Steven Johnson attempts to shine a light on this issue in his TED Talk Where Good Ideas Come From; he's also published a nonfiction book with the same name. Johnson states that an idea isn't a single thing in isolation but should be viewed as a network where connectivity is critical. This network concept applies not only to the connectivity of neurons in a person's brain but also to the connectivity of diverse thoughts and concepts that combine and adapt to form powerful ideas.

Johnson argues that we hold a romantic view of how great technological innovations occur. We think of them as eureka moments experienced by lone geniuses and entrepreneurs isolated in their private laboratories. However, this type of innovation is quite rare. More often, big innovations occur slowly, after long incubation periods of immature ideas or hunches. And even then, people need to share their ideas openly with others, such as at weekly meetings, during annual conferences, or through collaborative projects. As such, Johnson advocates for prioritizing idea connection over protection.

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Johnson uses the example of Willis Carrier, inventor of the modern air conditioner, as an example of the lone genius model. At the turn of the 20th century, Carrier wanted to solve the problem of dehumidification. He succeeded famously in the great American tradition. He worked on his own, independently solved a large problem, and made a ton of money in the process. Carrier's experience typifies how most American businesses and laws operate. However, his experience is the exception. Most big innovations don't happen this way.

As Johnson analyzed major technological breakthroughs from the past 200 years, he saw that the majority were occurring in collaborative, non-market-driven environments. Where ideas were freely shared and profit wasn't the prime motivator, the best ideas flourished. This runs counter to what we typically think of when we consider the supposed benefits of privatization and profit motive to spur market innovations.

Learn how to go from next to best

Focusing on the next big thing may be effective for marketing new products, but it isn't great for promoting real innovation and developing valuable products and solutions. Efficiency is necessary, whether we're talking about energy-use efficiency or work-flow efficiency.

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But there's another important metric that's often missing: sufficiency. How much is enough? What does good enough look like? How do we know when we've reached it? When should we reevaluate our definition of sufficient? If you're not asking these kinds of questions—and are relying on the next big thing to get you over the next big hump—then you're probably spending a lot of energy on things that

might not drive positive results.

Instead of focusing only on what's next, consider where your team is on its longer journey and how your team fits into the broader network of energy companies and professionals. It's important to know where you are relative to where you want to be; that's why we're big proponents of roadmapping. When you take roadmapping activities and combine them with an environment that values best ideas and embraces collaboration and innovation, there's no limit to what your team can accomplish.
