



Stanford eCorner

Technology Cycles Start with a Breakthrough Innovation

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Estrin declares that technology cycles have to start with a break-through innovation, something significantly disruptive. When it happens we don't know it is a break-through technology, she notes. In time, however, applications are built around this technology, she adds.



Transcript

Without actually going through the chart, which most of you who have looked at the industry who have probably seen something about technology cycles with the early adapters and what happens as, as technology matures. The one thing I wanted to point out is that technology cycles have to start with a breakthrough innovation so in the end any cycle that we've gone through, somewhere before that cycle started was some type of breakthrough innovation. Now a couple of things to remember from that, there's a difference between breakthrough and incremental, which I'll talk about in a minute. You can do wonderful innovation it may not be breakthrough innovation. So there has to be something significantly different and disruptive and the fact of the matter is when it happens, we don't know that it's breakthrough or we don't know that it is enabling. We only know that it happens and some time later, applications build on it and you look back and say, "You know what? That was the breakthrough innovation or that was the enabling that led to the cycle the we're now in." Cause I get asked all the time when people say, "Where is the next thing? Is this breakthrough? Is that breakthrough?" Things can be very interesting and then fizzle out for lots of business reasons or for application reasons. It's only in hindsight that you really can understand what was breakthrough. Once you have that kind of new enabling technology, there always is a period of time and if you go back on speaking in a week or two at a celebration for Ethernet's 30th anniversary. 30th, now that makes me very old because I was asked to talk about on the panel with the people that were there at the beginning. But the growth didn't come 30 years ago right? We're just coming off of that incredible growth.

So even something like the Ethernet that we think of as, or we used to think of as relative new took a fairly long time to go from the time when Metcalfe actually and Boggs did it or invented it in the Ethernet to be realized and for us to realize how significant it was to what we're doing. Then once the growth and the cycle starts to pick up, it is incremental innovations that drive how far that growth is going to go and keep that curve long.