

## The Paradigm Trap

Written by MT Staff  
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One hundred years ago, Albert Einstein was in the midst of an extraordinary run of paradigm-busting theories. In six months, he published five that would change dramatically what we thought we knew about the universe.

Einstein's accomplishments were reviewed recently by Ronald Kotulak, science writer for the Chicago Tribune, in a special feature. In it, he recounted Einstein's papers of 1905:

- March: Light exists as waves and particles
- April: Molecules can be measured
- May: All matter is composed of atoms
- June: Time and space are not constant
- September: Matter can be converted into energy,  $E = mc^2$ .

It was an amazing leap of thought beyond the Newtonian paradigm. How did he do it? According to a quote from Kotulak's article, Einstein said: "I keep asking questions that only children ask. They learn how to stop asking them in their schooling. I continue to ask them."

Also, he was not bound by the existing paradigms of the famous physicists of the time. He was a nobody, a patent clerk, and had nothing to lose by thinking freely. He had no reputation to protect.

We have touched on similar themes from time to time in this column, noting that paradigm

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busters typically arrive at solutions by asking simple, basic questions and they are often successful because they are new to the job and do not have the baggage of the existing paradigm.

However, once you make the breakthrough, you may become trapped in the new paradigm. According to the article, “Einstein also dug in his heels when he didn’t quite agree with bold new scientific concepts, even after most other leading physicists accepted them.

“[Niels] Bohr and Einstein were close friends in the 1920s but had a falling out over quantum theory. Bohr loved the idea that in the subatomic world the behavior of particles could only be averaged out. Things happen by chance, and it is impossible to know exactly what an individual particle is doing at a given time.

“Einstein couldn’t fit quantum physics into his unending quest to unify all the forces of nature and couldn’t accept its loose ends, famously saying: ‘God does not play dice with the world.’”

We hope you have a maintenance and reliability paradigm that works and that you are not still rolling the dice with your equipment. And no matter how well your paradigm seems to work, don’t become trapped in it. Keep your eye out for the new theory that may take you to a higher level of performance.

[Robert C. Baldwin](#) , CMRP, Editor