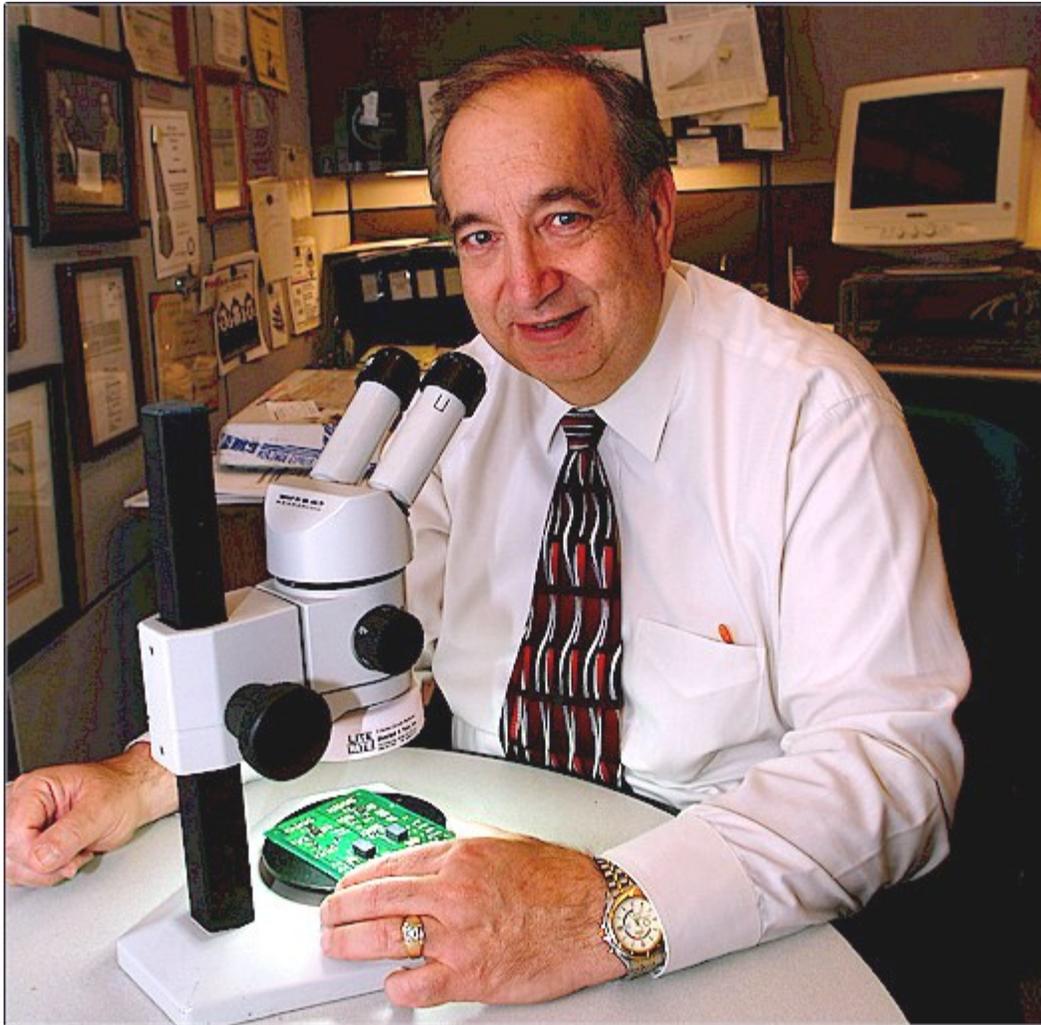


Theodore Lach Looks For Simple Solutions

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During his 34 years with Bell Labs and Lucent, Lach has been an innovator in many fields, including component qualification, system reliability, flammability standard test methods and wafer fabrication.

When 2002 Bell Labs Fellow Theodore Lach was first hired by Bell Labs in 1969, he was asked to help unravel a scientific mystery that had plagued his colleagues for years -- finding the source of noise in thin film resistors.

As only the second physicist in his Thin Film department, Lach wasn't sure how his expertise would fit in with the experienced chemical, mechanical and electrical engineers. But after just six months on the job, he had not only located the source of the noise but recommended a solution to eliminate it as well.

"All of the theories that had been tossed around were extremely complicated, yet the actual problem and its solution were both very simple," said Lach, currently a consulting member of technical staff in Convergence Solutions in Naperville, Ill. "I learned then to always look for the simple solution first, no matter how daunting the problem might seem."

Today, Lach applies this principle to his work in hardware reliability for the 5ESS® Switch. As a major contributor on the product development team, he has helped make the switch the most reliable in the world -- attaining an unprecedented system reliability of 99.9999 percent for the past seven years -- while contributing to hundreds of millions of dollars in component cost reductions.

"Reliability is absolutely critical to our products and our business because it directly influences whether we gain or lose customers," said Lach. "In order to gain customers, we must provide high-quality products that our customers can count on, just as we've done with the 5ESS® Switch. The challenge, though, is to continuously increase reliability without needlessly adding extra costs for Lucent or our customers."

And while achieving the right balance between science and finance is no easy task, Lach's keen understanding of Lucent's business and ability to find creative solutions to new problems have proven to be a winning combination. "The trick is to understand our customers' environment," he said. "If we know how they are going to use our products, we can strategize accordingly and deliver a product that suits their reliability needs as well as their financial situation."

Constant Contributor

During his 34 years with Bell Labs and Lucent, Lach has established himself as a key leader and innovator in the fields of component qualification, system reliability, flammability standard test methods, thin film technology, wafer fabrication, integrated circuit (IC) design rules, mask making and IC industry reliability standards. Before directing his efforts toward the 5ESS® Switch, he contributed to reliability improvements of the 1A ESS® and 4ESS® switching systems circuit packs, which had formed the backbone of AT&T's network. In addition, Lach is a valued reviewer of the corporate Hardware Reliability Prediction process, which is used to predict the reliability of a circuit pack or switching system.

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-- Theodore Lach

"Ted has a tremendous depth and breadth of knowledge in reliability, components and switching systems," said Jeanne Cseri-Martin, Lach's supervisor and director, Convergence Solutions Hardware Development, in Naperville. "He is always able to lead the team in the right direction."

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Cseri-Martin notes that Lach "is also an outstanding communicator. Like a great teacher, he has the ability and enthusiasm to explain complex phenomena in clear and simple terms -- a skill that has been crucial in conveying our reliability strategies and plans to other teams within Lucent, as well as to our customers."

Lach's knack for communication has played a significant part in the success of the 5ESS® development team since he joined the group in 1985. For example, Lach worked with Bellcore (now known as Telcordia Technologies) and Bell Labs to develop methods for simulating hygroscopic dust effects on circuit packs, which led to the development of mitigating solutions. Also, when component moisture sensitivity was affecting 5ESS® reliability back in 1990, he began weekly conference calls to bring different teams together to work on understanding and characterizing this phenomenon.

And in 2002, Lach's technical acumen and strong communicative abilities were recognized once again when he was specifically asked to represent Lucent on the U.S. Homeland Security Telecommunications Systems focus group, which developed and published recommended telecommunications security best practices. He took a leadership position in this group as well, heading up a team of hardware experts from many of the country's leading telecommunications companies.

"The focus group gave me an opportunity to take part in something that will benefit the nation's telecommunications industry and fill a void in the security of our telecommunications systems," said Lach. "I think that we will see long-term results once our suggestions are implemented."

Inspiration from Bardeen

Early on in his career, Lach drew inspiration from Nobel Prize winner and Bell Labs scientist John Bardeen, who co-invented the transistor in 1947. Bardeen later worked as a professor of physics at the University of Illinois, where Lach attended graduate school during the late 1960's.

"I would sit in the physics library and stare at him in complete awe," Lach said. "Although we never spoke, sitting just two chairs away from one of the greatest physicists in history gave me the stimulus to do my best and achieve great things in my life and work as well."

In naming Lach a 2002 Bell Labs Fellow, Lucent is recognizing him for just that -- a constant commitment to achieving great things. Now one of Bell Labs' top performers himself, Lach's many contributions to switching systems component and product reliability, silicon fabrication techniques and industry standards have helped Lucent build better products, save money and win customers.

And according to those around him, no one is more deserving of the honor.

"These are the times that you live for at work," said Cseri-Martin. "It's wonderful to see recognition given to someone with such extraordinary talent and dedication to the company."

For Lach, the biggest thrill is yet to come.

"It will be pretty amazing to see my plaque next to all of the brilliant Fellows named here in Naperville over the past twenty years," he said. "This whole experience is a dream come true."

— by Kate Reuter

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-- Jeanne Cseri-Marin