



Inventor connects smoke detector, alarm clock

By JIM STAFFORD

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OKLAHOMA CITY (Apr. 25, 2008) -- One day in 1999, Dr. David Albert responded to the annoying "chirp" made by a smoke detector in his Oklahoma City home by replacing the failing battery.

When he tested the new battery and the smoke detector emitted the high-frequency alarm that would sound in the event of a fire, serendipity happened.

Down in the basement of his home, Albert's then-14-year-old daughter, Kathryn, noticed that the smoke detector alarm caused a blip in a wireless device that her father had developed for monitoring patient vital signs in hospitals. Kathryn was scheduled to undergo surgery for a spinal condition, and Albert planned to use the wireless technology to monitor her vital signs.

"It was pure serendipity because the heart monitor I was going to use on her was tuned to the same audio frequency as a smoke alarm," Albert said. "Katy saw that it 'detected' the smoke alarm sound."

A seed was planted that eventually flourished and became a new company called InnovAlarm, which was founded by Albert to solve a disturbing issue with traditional smoke alarms.

"We had followed a number of TV news stories around the country about the fact that children do not wake up to smoke alarms," Albert said. "While brainstorming, (Katy) said that an alarm clock woke her up every day, and we should implement our alarm sound detection in an alarm clock.

"That idea was the beginning of InnovAlarm."

Albert developed the technology around that serendipitous discovery, winning seven U.S. patents along the way. A dozen more are pending.

Katy, now a senior at Harvard University, was listed as co-inventor on the first patent for a smoke alarm-detecting alarm clock. She also is a shareholder in the InnovAlarm, for which her father is chief scientific officer and chairman of the board.

After more than three years of development and testing, InnovAlarm is ready to take the technology to market, Albert said. **Engineers from ICX Technologies in Stillwater helped refine the technology and make it reliable for use in an alarm clock.**

"This took twice as long, and twice as much money, to develop as I expected," Albert said. "But that's the way it always is when you are an entrepreneur."

Mark Colello was hired last year as InnovAlarm chief executive officer and president. Company executives plan to showcase their technology at its first industry trade show in June.

Colello is a former executive with consumer products company First Alert who first learned about the InnovAlarm technology when Albert showcased it for First Alert executives. InnovAlarm's first target audience will be people with high-frequency hearing loss, Colello said. High-frequency hearing diminishes rapidly as people over the age of 60 get older, he said. "That is roughly 35 million people in the U.S. today," he said. "We will reach them through hearing loss retailers, hearing aid sellers including professionals, TV retailers like QVC and other small venues."

The company should have its first product on the market in the first quarter of next year, said Colello.

The InnovAlarm technology detects the shrill, high-frequency sounds made by smoke and carbon monoxide detectors and delivers it to the bedside of users in deep, 520 hertz tones that will wake the deepest sleepers, Albert said.

Children, older adults and even college age students are vulnerable.

In fact, college age students who sometimes go to sleep in an intoxicated state and can't hear high-frequency fire detectors are a potential InnovAlarm market. Albert cited the fire at a North Carolina resort last October that claimed the lives of seven college students as an example.

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