

LESSONS IN ENTREPRENEURSHIP

Thank you for the music

Inventors create products, but it's entrepreneurs that create markets, say Stuart Read and Nick Dew

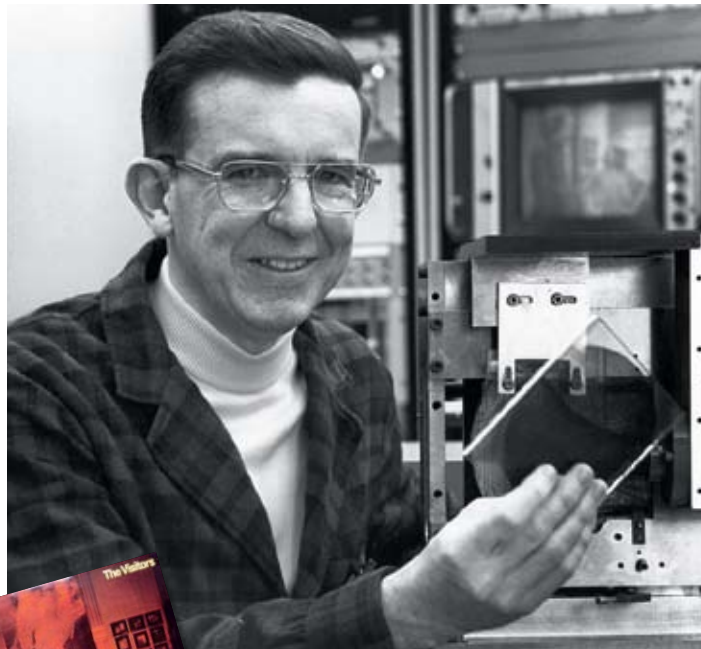
Quick trivia question: What was the first audio title pressed on to CD? Answer: ABBA's *The Visitors*, 1982. Since this historic moment in culture and technology, more than 200 billion CDs have been sold, and the format has provided a foundational element for the digital music revolution, as well as a friendly way of storing large quantities of data that has greatly enhanced computer functionality. But where did CD originate, and how can it help us think about innovation?

A SOUND INVENTION

The answer to the first question is more modest than you might expect. James T Russell, from Washington state, is an engineer and an audiophile. As much as he loved music, his technical education reminded him that every time he listened to a vinyl record, the friction from the needle degraded the recording material and over time reduced the quality of the sound. Russell had designed and built the first electron beam welder, so when he joined Battelle Laboratory in 1965, he had already thought of combining his audio problem with his electron solution to create a recording device that would never touch the material, and could deliver top quality music after thousands of hours of listening.

NO NOISE IN THE MARKET

From a technology perspective, Russell was successful. He patented the first digital-to-optical recording and playback



James T Russell, above, invented the CD, which debuted in 1982 as an Abba album, left

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system in 1970, and in the process of refining it, earned another 25 patents for himself and Battelle. But, for the next 12 years, the invention went little further than the patent office. Battelle, which had 25 years earlier invented the dry copy process and licensed it to Xerox (and subsequently created an entire industry) was unable to persuade the market to listen to the possibilities offered by its new CD.

INVENTION TO INNOVATION

Eli S Jacobs, a New York venture capitalist, captivated by Russell's invention, formed a company called Digital Recording Corporation (DRC), which provided funding to Battelle to continue R&D and adapted the technology to store and play video. But it was not until Philips and Sony got involved that enough pieces came together to turn the CD into an innovation.

Philips owned Polygram

records, so had access to both music content and distribution. Sony added the credibility which established an industry standard around Russell's CD format. And while Sony and Philips extended their fortunes by weaving CD technology into the computer storage industry, Russell, Battelle and DRC were not able to profit from the invention until 1988, just four years before the patents completely expired.

UNEXPECTED ENTREPRENEUR

Two useful insights are audible in this story. The first is that even large firms can act entrepreneurially. Philips and Sony were able to do what Russell, Battelle and DRC were not – create a market. And while scientists or creative people can invent, it is entrepreneurs who innovate by making markets for new ideas.

The second insight is a more subtle entrepreneurial activity: the process of transformation. Applying something invented for one thing (CD audio) to something completely different (computer data storage). Like so many things in the world (Edison created the original phonograph using components from the telephone and the telegraph), it turned out that CDs have multiple purposes.

So look around. What do you see every day? How might it solve some completely different problem? Doing something unexpected with it to create a market is what makes an entrepreneur. ●

Stuart Read is professor of marketing at IMD, Lausanne, Switzerland.

Nick Dew is assistant professor at the Naval Postgraduate School, Monterey, California

