

Innovation/Global Risk

Was the World's Most Beautiful Woman Also the World's Smartest?

By Shlomo Mital



Hedy Lamarr

This is one of the strangest stories I've encountered, in the realm of creativity and innovation. It is about Hedy Lamarr. Very few readers will be old enough to remember this stunning Hollywood movie star of the 1940's, who appeared in *Samson and Delilah*, *Ziegfeld Girl*, *Tortilla Flat*, and others. Few know her patent forms the foundation for cell phone technology. Here is her story.

Hedwig Kiesler was the daughter of a Jewish Viennese banker. She became the trophy wife of Fritz Mandl, a wealthy Austrian munitions manufacturer. The stage director Max Reinhardt encountered her, cast her in several roles (even though her husband forbade it) and Reinhardt famously called her "the most beautiful woman in the world". And she was. She escaped from Mandl, fled with her luggage and jewellery and booked passage on a liner on which movie mogul Louis B. Mayer (co-founder of Metro Goldwyn Mayer) was travelling. When the ship docked in New York, Hedwig had a new name (given by Mayer himself, "Hedy Lamarr", named after a silent film actress) and a contract.

During her stint with Mandl, she had learned a lot about technology. She had a drafting table at home, where she used all her downtime to invent things, like a bouillon-like cube that produced an instant soft drink when mixed with water. Together with a weird musician named George Antheil, she worked on ways to help the U.S. war effort. Together they invented and patented a radio-controlled "spread spectrum" for guiding torpedos. (They also invented a "proximity fuse" anti-aircraft shell, a version of today's smart bombs.) U.S. Patent Office Patent No 2,292,387 showed how to synchronize transmitter (ship) and receiver (torpedo), in ways that could not be jammed, based on the idea of an 88-key player piano roll that changed frequencies according to a pre-set pattern. The bureaucratic U.S. Navy could not believe that a movie star could invent anything worthwhile and rejected her idea. But in 1997, Hedy Lamarr, age 82 and still gorgeous, along with Antheil (posthumously), were given a Pioneer Award by the Electronic Frontier Foundation. The reason: Lamarr's patent for 'frequency-hopping' formed the

basis of CDMA (code division multiple access), a foundation technology for cell phones. No-one was really aware of the link between Lamarr's invention and CDMA, until the Foundation gave her the award. Lamarr tried to join the National Inventors Council, a body that used creativity to help the war effort (WWII), but she was told her beautiful face was more valuable than her brain, so she helped sell War Bonds.

As a postscript: A Canadian wireless developer Wi-LAN acquired a 49 per cent claim to the patent from Hedy Lamarr herself, in 1998, even though the patent had expired long ago and had no economic value. Wi-LAN paid for the worthless patent in shares.

Hedy Lamarr was born too soon. Had she been born 50 years later, perhaps she might have married Steve Jobs. If she had, who knows what she might have invented?