



Dow Jones & Reuters

THE WALL STREET JOURNAL

Manager's Journal: Why Cell Phones Succeeded Where Iridium Failed

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1,000 words

23 August 1999

The Wall Street Journal

A14

English

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The Iridium satellite-phone project, with its 66 satellites orbiting at 17,000 miles an hour, is a technological, logistical and regulatory triumph. The satellites were launched and deployed in a year, creating a wireless communications network that spans the globe. But Iridium, which filed for bankruptcy earlier this month, has been a huge marketing failure. To understand why, it's helpful to evaluate it in terms of what we call the four A's, all of which must be strong for market success:

-- Acceptability: Does the service meet customer expectations? Iridium compares poorly with its competitors on all facets of acceptability. The one-pound handset is huge by current standards, and service reliability and call clarity were poor (especially early on). The phone cannot be used inside buildings or cars. Iridium's coverage is advertised as global, but in fact excludes many countries in Europe, Asia and Africa.

-- Affordability: Are customers able and willing to pay for it? In an era of \$100 miniature cell phones, the Iridium handset cost \$3,000, and airtime prices ranged from \$4 to \$9 a minute before recent reductions. Even people who can afford such prices usually aren't willing to pay them.

-- Availability: Can customers readily acquire and use the service? Iridium can serve only about 25,000 users at a time. What's more, the sales force is inadequate and customer service is poor.

-- Awareness: Are customers well-informed about the service? This is where Iridium excelled. In addition to receiving huge amounts of free publicity, the company orchestrated a \$180 million media blitz, running ads in The Wall Street Journal, Fortune magazine and 37 airline magazines. In addition, it launched a major direct-mail campaign in 20 markets and 20 languages. It is safe to say that most executives in Iridium's target market were quickly made aware of the service.

The media blitz, however, wasn't enough to overcome the technological and marketing shortcomings of the system. In just the first quarter of its advertising and direct-mail campaigns, Iridium received 1.5 million inquiries from potential customers. But only a few thousand signed up. Iridium's target market -- business executives who frequently travel internationally -- amounts to perhaps eight million people. Its subscriber base is a mere 20,000.

By contrast, consider the success of cellular telephony. A late-1970s market-research study commissioned by Bell Labs, which invented the technology, predicted a subscriber base of only 800,000 by 2000, and concluded there was "no market at any price." AT&T stayed out of the business, leaving it to local phone companies and others.

In the early years, it appeared the forecast was right. Phone companies targeted only an elite market of business executives. The service came up short on all the four A's: The service was expensive; handsets cost thousands of dollars; choice was limited; service was unreliable and only available for cars; installation was cumbersome. Result: Low volumes weren't enough to offset the large infrastructure costs, so cellular companies suffered huge losses.

All of that changed when cellular companies adopted some marketing innovations. They broadened their target market to include sales people, professional service people and women concerned with safety and others. They started offering below-cost handsets with service contracts, removing up-front barriers to adoption. They

lowered airtime prices and created multiple pricing packages to appeal to different segments. They stepped up promotional efforts and expanded their distribution channels to include electronics retailers, mass merchandisers and even kiosks. Better technology helped, too. Handsets became smaller and were detached from cars; voice quality and network coverage improved.

The industry took off and experienced explosive growth rates of 40% to 50% a year. By next year there will be an estimated 80 million subscribers in the U.S. alone -- 100 times as many as Bell Labs had predicted. Cellular users now can roam in 62 countries, with more to come.

Cellular's success is an important reason for Iridium's failure. Long-running projects must be vigilant for signs of obsolescence, and be prepared to change direction or even abandon the project if necessary. Iridium's backers seem to have fallen into a classic "sunk cost" fallacy. Having already spent billions of dollars and years of effort on the project, they were loath to abandon it. Instead, they redoubled their efforts, and spent more billions.

The company put too much stock in being the pioneer -- the first company to offer global satellite-based telephony. Unless a company has strong patent rights (as in pharmaceuticals) or the ability to reduce costs and keep up with demand, the advantages of pioneering are fleeting and the risks are many, especially with fast-moving technology. Innovative "fast followers" benefit from the pioneer's experience to fine-tune their own four A's and use more powerful and cost-effective second-generation technology, more precise targeting, better pricing and so on. In fact, a 1993 study by Peter Golder and Gerard Tellis found that pioneers were market-share leaders in only four out of 50 product categories.

Iridium is now operating under Chapter 11, with a revamped marketing strategy. If it succeeds in writing off its \$5 billion in development costs, the venture might yet become a marketing success. But it is almost certain to remain a business failure. Even if the company gets a million customers, it would have to net \$1,000 a year from each of them just to pay its \$1 billion annual operating costs.

Several other companies are waiting in the wings with their own satellite projects. Based on Iridium's experience, we cannot anticipate clear skies for them.

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(See related letter: "Letters to the Editor: Non-Terrestrial Way To Phone Home" -- WSJ Sept. 2, 1999)

Document j000000020010828dv8n00nkr

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