

**The Influence of Major Pioneering Product Innovations and
Technological Trajectories in High Technology Markets: Lessons from
the Personal Computer and Digital Music Industries**

by

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Abstract

The central goal of this thesis focuses on two critical issues: First, it examines what triggers market takeoff and explores what role, if any, product characteristics have on market acceptance and diffusion. Second, it examines why some incumbents miss opportunities despite significant effort, resources and capabilities, and historical experience with customers in the same value networks. I study this issue from the perspective of how firms are able to “see” and “create” game changing product innovations, while some incumbent firms miss opportunities that turn out to be important. I am trying to understand what happens during the early stage of a really new innovation. I am especially interested in why incumbents miss opportunities and why small firms or larger firms who are not incumbents recognize opportunities.

This thesis introduces the idea of a *beacon product*, a new construct that suggests that outstanding new products, particularly dramatic and visible innovations, can have an important impact on the development and diffusion of a product category. These innovative products hit the sweet spot in the market and help make the transition from early adopters to the early majority envisioned by the traditional diffusion literature.

This thesis asserts that beacon products trigger market takeoff, inducing a surge in adoption, demonstrating to consumers and firms alike that there is a large potential market for the product category. The thesis presents data that clearly substantiates that beacon products send a strong signal to firms and help reduce market uncertainty as they demonstrate what product characteristics are appreciated by a sizeable market. The concept helps fill a gap in the existing literature and shows a possible mechanism for the convergence of a product category around a dominant design.

I show how paradigm shifts in product use, rather than different value networks or exotic technology, may play a role in incumbent’s myopia. I demonstrate how lead user affinity groups’ members are advantaged in understanding the potential of an innovation at its early stage of development.