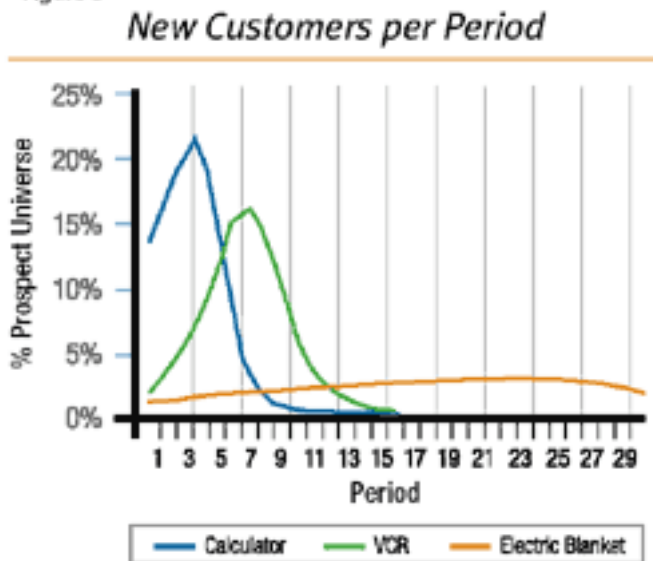


Forecasting Market Size for a Unique New Product

Wednesday, 3 p.m. Qool Electronic's VP of marketing is sitting in a windowless conference room along with the CEO, CFO, and CMO. They are listening to two engineers from the product development group explain how they think they can make a wireless device that combines a digital cable box with a 1TB hard drive and a 96x DVD R/W, and have it connect to any flat-panel plasma TV from up to 30 feet away, thereby eliminating the need for all the wires and devices that clutter up the flat-panel experience. What's more, this product would be small enough to fit into the base of the average table lamp so it blends into the room décor.

Figure 1

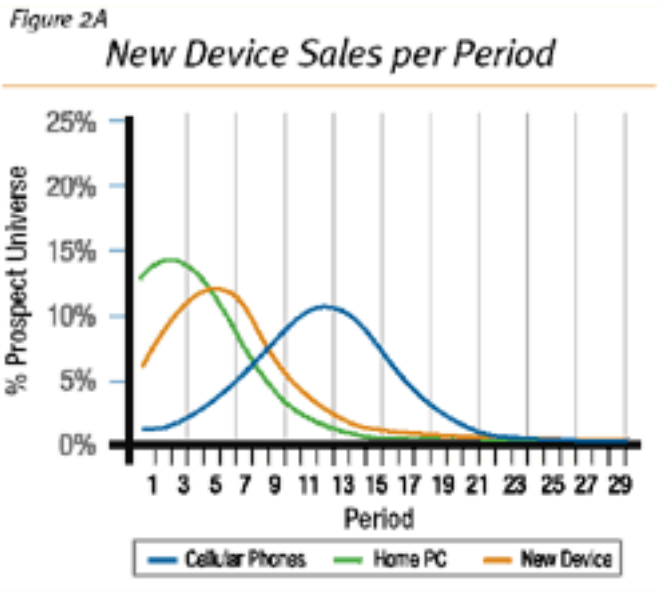


Sourcing and manufacturing have evaluated the plans and concluded that the initial capital investment would be in the range of \$10 million to \$15 million to tool the plant, and that unit costs would be in the range of \$600 to \$700 initially, dropping to under \$200 when volume reached 10,000 units/year.

As the engineers roll deeper into the details of how it works, the VP's mind starts to wander to questions like: "Who would buy this product?" "How many can we sell and at what price point?" "How long will it take before we're moving 10,000 units?"

As the meeting ends, the CEO grabs the CMO and VP in the hallway and says she would like to review the opportunity with the Board on Friday and asks for a high-level perspective on the short- and long-term sales potential for the product.

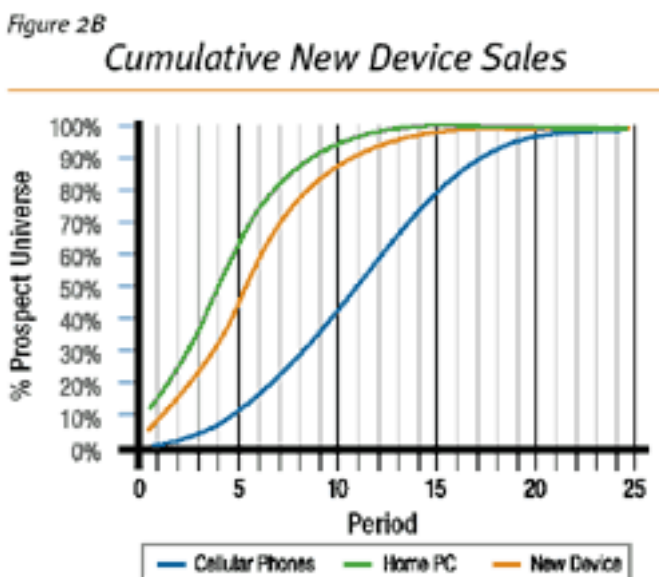
Unfortunately, there is no benchmark sales data for a product like this because until today, it didn't exist. This is a whole new market for Qool. And complicating the challenge is the fact that the end consumers would have no prior experience with such a product, making purchase intentions research highly suspect at best.



While there are several elements that should go into the consideration of sales potential, one longtime tool has proven itself to be a good starting place ##the diffusion curve (a.k.a., the "bass diffusion model" named for Professor Frank Bass, who pioneered the concept in the late 1960s.)

Borrowing from the concept of the product adoption lifecycle (innovators, early adopters, etc.), the diffusion curve uses two key variables to attempt to predict the speed with which a truly new product/service concept will penetrate the target universe. Those two variables are **innovation** (the speed with which the product will be embraced by the first "generation" of buyers) and **imitation** (the speed with which penetration will spread to subsequent generations).

When you combine the two, you get an approach that's been proven to be highly accurate for predicting the market potential for many of the products already in our lives, such as TV's, microwave ovens, fondue pots, feature films, juice boxes, and even SUV's. Figure 1 (above right) shows examples of the penetration of products with variations of innovation and imitation characteristics. Calculators had high innovation and imitation rates; electric blankets were low on both counts; VCR's were in the middle.



What makes the diffusion curve approach so useful, however, is that the innovation and imitation rates for hundreds of products are readily assessable (albeit, with some searching) on the Internet. As a

result, we needn't "guess" at the likely rates of innovation and imitation for our new entertainment device, but rather plug in the rates of some products we consider to have been "similar" with respect to their target market and role in the consumers' life. In Qool's case we might use cellular telephones (owing to similarity of wireless freedom and initially high prices) and home PCs (digital data storage and complexity parallels).

By looking at the diffusion curves for those two "benchmarks," we can begin to narrow down the potential range for our new product and arrive at a more informed initial estimate (orange line) that might be enough for an initial introduction to the Board.

Granted, this is a very preliminary forecasting methodology. To tighten up our forecast further, we could:

1. Ask for input from distributors, retailers, and industry experts with no direct stake in the question;
2. Conduct some consumer research among prospects on purchase intentions and factor them down appropriately to derive a rough estimate of the total market size; and,
3. Build a Monte Carlo simulation of both the innovation and imitation variables to help illuminate the risks of being wrong in our guess.

In the end, a diffusion curve is just another tool to help integrate the collective learning of thousands of marketers who have pioneered new products before you to sharpen your intuition and analysis.

Additional resources and information:

- [Interactive working sample of a diffusion curve](#)
- [Case study: How bass diffusion predicted sales for DirecTV](#)
- [New product forecasting](#)

