PRODUCT DESIGN & DEVELOPMENT

Measuring Product Development Vitality

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One of the things that satisfy engineers and product developers the most is to see their newly released products sell like hotcakes. It goes right to the core of why they pursued careers in science and engineering, to create things that better the lives and capabilities of others.

One of the things that satisfy finance and business professionals the most is to see the products they decided to invest in become successful. One of the things that satisfies investment bankers and brokers the most is to see companies with a continual stream of winning products year after year.

Perhaps these are the reasons why a metric that did not exist before 1988 is now the number one corporate R&D performance metric in North America. In support of its decades long reputation for invention and innovaton, the "Vitality Index" was created by 3M to bring emphasis to the percentage of total company sales that come from new products each year.

New Product Sales & Profits

Most of us know the metric as "New Product Sales," or "Revenue Due To New Products," along with a myriad of other names. What they all strive to measure is the newness of annual revenues. The actual value of this key performance indicator [KPI] differs greatly by market, by the length of product lifecycle, and by the age of the company. A separate article would be needed to delve into cross-industry differences.

More subtly, but equally important, is that the unit profitability of new products is generally higher than that of old products. While engineers and scientists don't generally get revved up about profits, the business and Wall Street folks do get quite excited. The relationship of new product sales to overall company profitability was another driving force behind the meteoric rise of the Vitality Index. Again, a separate article would be needed to delve into cross-industry profitability differences. The "Vitality Index for Profits" is a complex subject.

The Growth of Vitality & Shades of Gray

My firm was first exposed to the metric shortly after its creation. We watched it gain acceptance during the nineties. For the past seventeen years we have researched the industry adoption rate of the metric. The third most used corporate R&D metric behind R&D Spending at 79% and R&D Headcount at 67%, some form of the Vitality Index is now used by 62% of companies.

Our research has a +/-6% Margin of Error across two hundred participant companies. We have formally studied the metric six times since 1998, and are confident that it is not done rising yet. The demand is still growing. Wall Street and European market analysts are increasingly focused on it. That will create additional global pull for the Vitality KPI.

Right now, corporations hold the upper hand in contriving a definition that puts their best foot forward. As with many things, the devil is in the details. Too new to be accurately benchmarked between companies on the same level as mature metrics like "inventory turns" or "days receivables," the various differences in the measures of new product sales today will ultimately settle out.

The two hardest things to determine are "what is a new product" and "how old can a product get before it is no longer new." These two complex questions will give corporations the upper hand over analysts for years to come.

A Right Definition For Vitality

What is a new product? Is every SKU released a new product? Well that depends whom you ask. Sales and marketing professionals are generally biased in one direction. Technical and finance professionals generally have a different bias. A company should determine a sensible definition of "SKU newness," and hold the line for several years to learn their way into the metric.

Retain the supporting data each year in case you wish to restate the metric in the future. Some companies that were early adopters actually have an internal number that is different than the one they communicate externally, because they know their competitors overstate their numbers.

How old can a product get before it is no longer new? Well that also depends whom you ask. For this challenge however, better management science exists to assist in defining the length of time that a product remains new. Just about every marketing organization maintains product life cycle curves.

Right after release, unless you are Apple, sales are generally slow to start rising. Then, once the marketplace appreciates the value, acceleration in sales begins. After a period of time the acceleration declines and sales start to flatten out. When sales start to flatten, products are generally no longer new.

Determining the point at which flattening begins is also a judgment call. If good product life cycle charts across the product line exist, take average point in time when the second derivative of the curve goes negative. Using math keeps the emotions and politics to a minimum and promotes consensus on this variable.

Our research also investigated the length of time that companies currently use to define a new product. We restated Vitality as, "Current Year Sales Due To Products Released In The Prior 'N' Years." We asked respondents the number of years that they use for N, the length of time a product is defined as new.

- One Year 5%
- Two Years 7%
- Three Years 59%
- Four Years 5%
- Five Years 21%
- All Other 1%

Gaming The System & Consequences

Few companies have products that remain new for five years. You probably reacted to the 21% figure when you just read it. Why use five years then? The longer the time that is used, the higher is the annual percentage of new product sales. The same gaming occurs with lower N figures.

Companies with a likely one-year N use two years. Nevertheless, even with an N that is gamed, a useful year-to-year rolling measure of new product sales results that provides the ability to track new product revenue performance. This, in turn, drives product portfolio decisions for the years ahead.

One caution if you are thinking of a longer N, for whatever reason. The longer that N is, the longer sales generally takes to achieve targeted volumes. "Long N" companies often have "hockey stick" sales forecasts. "Short N" companies generally have quicker ROIs.

Benchmarks When N = 3

The majority of companies, 59%, define a new product as being less than three years old. For those companies, some benchmarks from our experience may be useful.

Companies with less than 10% of annual sales coming from new products probably have an untapped opportunity. Companies with 10%-25% of annual revenues from new products can probably get even better. Companies with 25%-40% of year-to-year revenues from new products are the ones you see most in the media, and the ones you purchase for capital gains. Companies consistently greater than 40% are world-class companies, and you will likely retire early if you own them.

Summary

Define "what is a new product" and "the length of time a product remains new." Focus corporate thought and effort on what makes sense for your company. Agree on definitions that your company is willing to stick to for a few years. Keep the supporting product sales data so you have the flexibility to restate prior years if you change your mind.

Yes, keep an eye on what your competitors are doing and what analysts might be asking, but make it your own metric until you master it. It took 3M a number of years to master the metric and they changed N several times along the way.

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