IS R&D A PRODIGAL CHILD?

Getting returns on R&D investments is a tough challenge, but success largely depends on appropriate value creation.

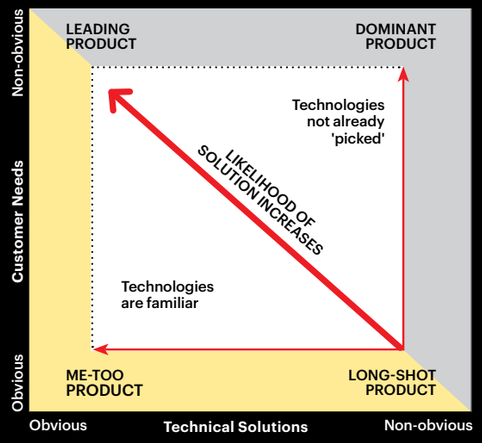
By M. Muneer and Dan Adams
Illustration by Ajay Thakuri

MOST INDUSTRIAL COMPANIES end up squandering their R&D resources. Interestingly, quite a few enterprises actually know that more than half of their R&D money is going down the drain. Numerous studies show that 50-75 per cent of R&D budgets get wasted on unsuccessful new products. And unlike advertising, where no one knows which 50 per cent is wasted, companies know which half of the R&D spending has not been effective although they realise it after the actual expenditure takes place.

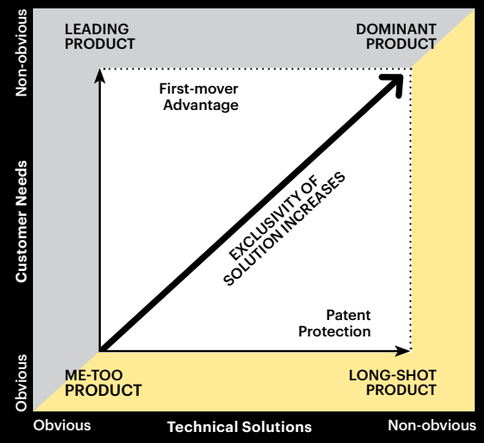
It does not mean R&D labs are filled with non-technical people incapable of finding the right answers. They are just being asked the wrong questions. Questions that are unimaginative, being asked at too many other labs and, if solved, create too little value. In essence, these questions are too obvious.

Such questions can be grouped into two sets – wrong-market and wrong-need. The former occurs when researchers are asked to develop products for market segments that are unviable. It is an outrageous waste of resources, but most companies end up doing it.

PRODUCTS



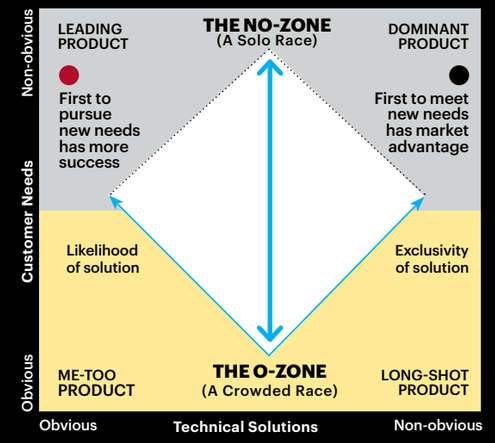
REWARDS



The New Matrix

Catering to customers' non-obvious needs creates new value-based products, which will earn higher returns. One may use obvious or non-obvious technology, the former leading to quick success and the latter leading to a long-term market advantage. Companies running a solo race will have higher success rates due to product exclusivity and/or their ability to address new needs.

TRACK PROFIT ZONES



On the other hand, most companies we know lead the footrace with wrong-need questions. Here is an all-too-familiar scenario faced by many manufacturing companies. An important customer tells your sales representative what it wants. It would have informed the same thing to every other supplier who is your competitor. That starting pistol shot begins the race, and your sales representative quickly drops the request off at R&D's doorstep, properly packaged and labelled, of course. R&D may ask the person to go back and ask more questions, but once the person has handed the baton to R&D, his/her leg of the relay is pretty much done.

The customer is always smart, and your competitors' sales representatives take the same request to their respective companies. Terrific! Now you are all in the same footrace, with the customer waiting at the finishing line. If more than one crosses it, you can forget that much-coveted price premium.

YOU WILL NOT WANT TO WIN THE RACE ONLY TO COMPETE ON PRICE. CHOOSE THE RACE, TIME AND PLACE BY TARGETING AN ATTRACTIVE MARKET SEGMENT

You will not want to win this race only to compete on price. It is better that you choose the race, time and place by targeting an attractive market segment, which you pursue with in-depth customer interviews. Making use of advanced probing techniques, a two-person or three-person technical marketing team can unearth unspoken needs. When your team knows how to engage the customer in collaborative brainstorming, you are likely to bring back unimagined needs as well. The race is on, and your competitors do not even know it. Most importantly, the new product you develop will be nothing like what the customer has seen before and nothing like it will be seen for a long time if you have patented it right. It will deliver real value, which the customer will be only too happy to procure by paying a premium. Patents are only granted if they are useful, new and non-obvious.

Clearly, the value of non-obvious technical solutions is much higher than run-of-the-mill solutions.

Products And Value Creation

Let us take a look at the value that can be derived from non-obvious customer needs. It can be much bigger than imaginable. Consider a 2x2 matrix of the customer's obvious and non-obvious needs against the obvious and non-obvious technical solutions, and you will see four distinct product groups emerging (see the graphic ***Products***). These are Me-too (obvious technology for obvious needs), Long-shot (non-obvious tech for non-obvious needs), Dominant (non-obvious tech for obvious needs) and Leading (obvious tech for non-obvious needs). The key question is, as an enterprise, which ones should you pursue? It depends on the risks and rewards where a) risk is driven by the likelihood of finding a technical solution and b) reward is considerably boosted if you become the exclusive solution provider.

Under ***Products***, the likelihood of technical solutions' success increases as you move to the upper-left. Of course, the 'likelihood vector' points left because you are using familiar technical solutions. But it also points up because you are trying to answer questions that have never been asked. The technical solutions are unlikely to be picked up by competitors as they are unable to see the non-obvious needs.

Now take a look at the ***Rewards*** chart. It depends on whether you are the exclusive supplier of new customer value. Under the circumstances, you can usually charge the customer a higher price that returns to you a large portion of the value he/she receives from your product. But if a competitor matches your product, nearly all of the value, and your profit, will immediately swing to your customer.

As you move to the right with a patented technical solution, your exclusivity goes up. However, the exclusivity vector also points up as you are the first to discover and meet a non-obvious need. The first-mover advantage is yours in terms of branding, industry-leading reputation, learning-curve advances, path-breaking innovation or even an application patent.

Since any new R&D initiative's value is a combination of its risk and reward, the vectors should be added together, as featured in ***Track Profit Zones***. By actively seeking non-obvious needs (the No-Zone), your team will be the first to uncover important needs. It is more likely that the team will succeed technically and give you the first-mover advantage.

What To Pursue

We believe most companies will benefit tremendously from spending less time in the O-Zone. It is far too crowded, and frankly, it is just plain difficult to win here. Given the different circumstances, here are the best possibilities a company may want to pursue:

- **Me-too Product:** It will not bring you much value, but some of these products could be needed to fill out your product line or meet strategic customer requirements.
- **Long-shot Product**: This one can be a resource sinkhole, but it could be worthwhile if you have a likely technical path.
- **Dominant Product:** This can give you blockbuster value, but do not start here. What is the point of a patented solution if competitors can find an obvious answer?
- **Leading Product:** Make this your first line of attack in most cases. Only move off if you cannot uncover any non-obvious needs or obvious technical solutions.

The 'prodigal child' image of R&D can be overcome if your focus is on the No-Zone. But you will have to shift the workload by moving resources forward and outward: Forward in time by interviewing customers before starting costly product development and outward by spending more quality time with customers. The R&D efficiency will leapfrog and the costs will be a fraction of what you would have wasted.

You will be adding a dimension to your thinking that your competitors will not be able to. They will continue to work on product portfolios in the O-Zone, balancing Me-Too and Long-Shot projects but completely missing the non-obvious needs. They will be wasting resources in the zone of lowest possible R&D efficiency. Meanwhile, you will be competing where your competitors are not, by asking better questions. You will be running a race all by yourself. Which is a better race to win? BT

M. Muneer is the Co-founder and Chief Evangelist at Medici Institute; Dan Adams is the Founder of AIM Institute, USA