Interpreting Opportunity in Technology

Assessing the Impact of Innovation in Maximizing Opportunity

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Innovation – A Common Language?

The commonly traversed path of creativity, technology, product and opportunity seems to indicate that innovation occurs only at the beginning of the process. But does it? We often hear about companies that innovated to get to a leadership position in their industry. While in retrospect it is clear that decisions were made conducive to such results, there is very little in the way of understanding innovation, where it occurs, how to apply it and, most important, its effect on determining the size of an opportunity.

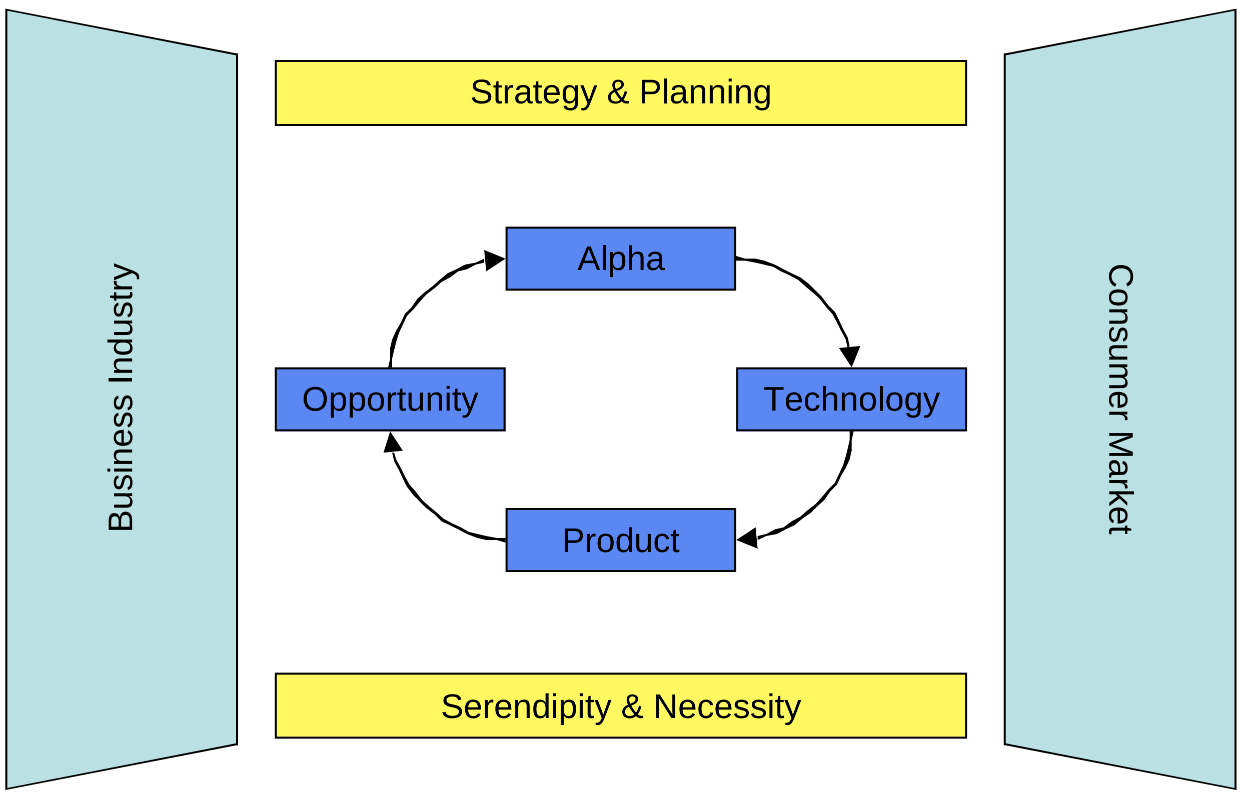

***Figure 1* – Innovation framework.**

The path begins with what I call ***alpha***, a conglomerate of processes, skills, knowledge, values and activities such as imagination, reproduction, analysis, and invention (see Figure 1). Alpha is applied to find an approach to a problem. Technologies are derived from alpha, ***technology*** defined in its broadest sense to mean a method to solve a problem. It is difficult sometimes to differentiate alpha from the technology embodying the alpha principle, so we won't worry to much at this stage to make any clear distinctions. Technologies are then packaged into ***products***, vessels required to reach a consumer market, which in turn fulfill an ***opportunity***. How big the opportunity will depend on how good the product is at solving a need cost-effectively. Innovation can take place in each one of these phases.

Opportunity or risk? Does not matter. Innovation is a vehicle used to maximize opportunity or reduction of risk. Strategic planning is useful in identifying opportunity goals, but more often serendipity and necessity are the reasons why innovation happens.

Take Southwest Airlines, one of my favorite examples of applied innovation. They saw an opportunity to offer low fare travel within the state of Texas and they planned how to achieve the goal. So strategically they identified the opportunity, created low fares, and everything worked, right? Well, not quite. Their innovative ways did not come from planning. They came from necessity. They needed planes to offer their service, and they did not have any money. Boeing happened to have three planes from a failed order, and decided to sell the planes to Southwest through a loan. The only way Southwest could pay the loan was by keeping their planes up in the air as much as they could, so they came up with a turn around time of 25min instead of 50min as was the norm. Innovative? You bet. Planned? Absolutely not.

The last piece of the puzzle is provided by the markets available for the products of the enterprise. And there are usually two markets, as products build value in two different segments. The first one is the ***product market***, all those buyers who benefit from solving their needs by using the product. The second one, much less obvious, is the ***industry*** where the company selling the product is situated. The more effective the products, the more value the company acquires within the industry hierarchy. Being aware of how both markets interact help frame the opportunity value realistically. In the case of Southwest, they provided tremendous value to the travelers (buyers) and consequently the company has grown into one of the most powerful in the airline industry.

Managing Equation – Can Innovation be Managed?

If we take a closer look at the components of the well-trodden path, we can single out a few important factors where innovation can make a difference on the overall opportunity size. There is no absolute way to control or apply innovation, but there is a way to manage it. Let’s look at a simple model and dress it up as an equation (please note that this is NOT a mathematical equation – rather, a vehicle for showing relationship between its factors):

$$[\ (\ \text{method} + \text{vessel}\ )\ /\ \text{cost}\ ]\ \text{x}\ \text{demand} = \text{quantification}$$

What we normally call product is represented in the equation by the relationship

$$(\ \text{method} + \text{vessel}\ )\ /\ \text{cost}$$

where ***method*** is alpha and technology combined, and ***cost*** refers to the cost of manufacturing method and vessel. ***Vessel*** is what wraps a method, what is used to deliver the solution to a market. ***Demand*** is the assessment of who will buy the product and how the company will position itself in its industry. And ***quantification*** is the mechanism chosen to transform the product into revenue, the business or revenue model. All together, they determine the overall opportunity size for the product. Innovation, applied to each of these areas, becomes a tool by which opportunity can be increased.

Method – Can It Determine Opportunity?

When comparing your method to others in your industry, it will fall under one of these categories:

- ***Core***. Your method is in direct competition with the prevalent one, but is not sufficiently distinct from it. Maybe it creates a slightly better product, more robust, cheaper. In this case you will be in direct competition with the dominating method in your industry, and in effect you are competing for market share. Thus your method is classified as core. Your opportunity is bound by competing with established companies. Intel and AMD are examples in this category.

- ***Complementary***. Maybe your method extends and complements the prevalent industry solution. In this case, your method will likely work with the most commonly available deployed solution. So market share is directly related to the technologies it complements, establishing a smaller share of opportunity. Crystal Reports complementing Oracle databases is and example.

- ***Disruptive***. Your method is radically different and it tremendously simplifies something that people are already doing. This category represents the largest opportunity as it can capture market share from incumbents, but also the riskiest if not done well. Success examples are Yahoo and Palm. Failure example is Cybercash.

- ***Obsolete***. The method is inferior to the current dominating technology, thus no longer viable. The opportunity is zero unless you seek to apply it in other industries. An example is 3M and the glue accident that created Post-Its. An engineer made a very large batch (tons) of bad glue, and hoping to save his job, created Post-Its in the process. Opportunity in this case is nil, unless innovation is heavily applied.

Innovation can happen by working on shifting the method across categories, or by understanding and accepting the opportunity that method creates, and innovating within the other factors in the equation.

An interesting example of method shifting is Transmeta, a computer processor manufacturer. The company was founded on the premise that a faster RISC processor emulating a Pentium processor could do the same as an equivalent Pentium, only faster and cheaper. This strategy would have placed Transmeta's method in the middle of the core category. However, after testing the first prototypes, it was discovered that the energy consumption and heat dissipation were half of a comparable Pentium. So a decision was made to focus on low power applications, and thus Transmeta's method became disruptive as there was nothing comparable in the industry.

Vessel – How to Get a It to Your Buyers?

The whole point of a vessel is to transport something efficiently from point A to point B. We have developed techniques for marketing, branding and others to package a solution and make it appealing to buyers. It is a hard business. But truth is, the closer the vessel is to what your buyers know, the easier it will be for them to understand what the product solves. Consequently the demand will go up for your product. The problem today is augmented by trying to reach multiple buyer audiences, causing the vessel to be less tailored to a specific class.

Innovative vessels can be one of the most effective approaches to increase demand. Try to find a unique combination of elements such that your buying audience will not be required to learn new ways of doing business.

In third world countries, milk is not delivered in gallon jugs, but in vacuum sealed packs that are impervious to temperature. Buyers are not required to have refrigerators in remote areas were electricity is not available. The message used to make them aware of the new packaging is "Take it with you where ever you are or where ever you live, it will be good".

Cost – Can It Be Done Cheaper?

Production and distribution costs are the most critical factors in having a successful operation and one that fails. Southwest has been able to maintain itself at the top of its industry through fanatic management of its operational costs. But there are other ways to achieve so.

- Trim unnecessary features, focus on doing one thing well – Palm Pilots where an example of the Spartan approach.

- Apply techniques from other industries to yours.
- Use new materials that provide better faster easier softer warmer colder.

Dell Computers, during the last few quarters, was able to show profits when most of the technology industry was in the decline. They did so by managing inventory costs – they asked their parts supplier to open up a parts warehouse next to their manufacturing facility in an industrial park in one of China's provinces. They were able to cut their inventory down from 1 day to 2 hours. Operational innovation is one of the most challenging areas in business, so we will only touch on cost as it relates to achieving opportunity.

Demand – Who Needs Your Product?

A product is adopted if it does what people already do, only better. The opposite is unfortunately true as well. Ask people to go out their way, try to convince them that a dramatic new way of doing things is better but that they will have to change their ways, and demand will drop. The lesson is that you should avoid at all costs to have to educate your buyer on how to adopt your product. Look at what happen to Apple's Newton. Wonderful technology that only a few understood. All of Apple's energy went into educating the masses about the benefits of PDAs. Only to see Palm eat their lunch. To size up demand for your product, do the following (among others):

- Determine what the product means to adopting consumers
- Identify companies in the core and complementary method niches
- Understand how these companies reach their buyers
- Determine companies that would benefit or be threatened by your new product
- Identify the 800-pound gorilla in the space

Above and beyond, marketing techniques provide mechanisms by which a target buyer profile is determined. But a useful heuristic that I use is this: if you can't explain to a prospective buyer what your product is in one simple sentence, or your buyer does not understand what you are saying, then either your product is wrong, or who you think of as your buyer is the wrong one.

Innovate by incorporating what your buyers do into your product and into your message. Demand will increase as a consequence. Picking up on the Southwest story, when Southwest came under heavy pressure from established airlines (United, American), they tried hard to compete on pricing only to find that these airlines had deeper pockets than they did. So Southwest studied their passengers and decided to offer a bottle of whiskey to everyone who would purchase a round trip ticket. They applied for a liquor license, got it, initiated the promotion, and saw their sales skyrocket over those of their competitors. So in order to survive, Southwest became the largest distributor of liquor in the state of Texas, for a period time.

Quantification – How Much Opportunity Can Be Captured?

There are models for quantifying revenue, more or less synergistic with the type of method you are trying to assess. The most common models are consumer sales, consumer distribution, product licensing, OEM, IP licensing, etc. Even selling the method itself is a way of quantifying opportunity.

So which one to choose? There is no certain answer. The best way to proceed is by realistically looking at all factors in the equation, and determining which model is more conducive to turning opportunity into revenue.

Innovation in this area is fruitful, and highly speculative as well. Witness how free phones are given if you sign up for a yearly service contract. Or how the buyer has to pay for digital satellite broadband so that the satellite company does not have to carry the cost of deploying the equipment. The Internet bubble introduced us to business model patents, where the model is so innovative that it becomes a trade secret for the company. If you venture into this area, be sure to create models that leverage infrastructure, companies and consumers already established in your industry. If that is not the case, your model will fail.

A humble example in this category is given by a printer who found opportunity in changing a model. He noticed that passengers, when given their tickets, all carried a ticket jacket with them, visible for the most part. This printer approached United and offered to print all the ticket jackets for free. Then he turned around and sold the space in the ticket jackets as advertising space. United was happy as they reduced their costs, and so was the printer, who changed his revenue model approach.

Interpreting Opportunity – Was It Real?

One of the hardest aspects of interpreting opportunity is to be realistic about what you can get in return for your method. If you are realistic the first time through the equation, you will be in a position to iterate and re-visit all factors with a focus on innovating.

Innovation is an art, not a science. It is a conjunction of values, skills, knowledge, action, planning, serendipity and awareness. Innovation, and knowing where to apply it, is the best tool you have to improve on opportunity. So go through the equation multiple times, examine the factors, your method, assumptions, and innovate where you can. Then re-assess your opportunity.

I hope this equation proves to be a tool for you to manage the art of innovating in your enterprise and bringing forth your next market success!