The Diffusion of Innovation

The study of how and by what means ideas and innovations are adopted by a population is known by social scientists and academics as the “diffusion of innovation.” In other words, how and why does something spread through a population?

Diffusion theory acknowledges that some innovations spread more quickly and ultimately more broadly than others. The sub-text is that some innovations, though meritorious and possibly even representing a huge scientific or design breakthrough, may spread less quickly. We’ve heard the stories about how certain discoveries languished for years, even decades, before they caught on. Why are we still using eight cylinder combustion engines when so many other technologies can power a vehicle? The answer lies in understanding the underlying dynamics that cause adoption behavior.

This is not a new paradigm. It is in fact a very old one. People have been studying this before Dom Perignon invented champagne, John Deere invented the steel plow or G. D. Searle marketed the first birth control pill. What is new, possibly, are two things. One: There is an ever-increasing body of research aimed at refining our understanding of the variables and coefficients that describe and predict adoption. Two: the field is being used to a greater extent to market products. There’s an over-arching premise that many find irresistible: it is easier to change products than it is to change people. As a veteran of the advertising and marketing communications industries, I know how expensive, time consuming and often frustrating it can be to change large population groups. We used to call it “market conditioning.” What our clients figured out was that market conditioning took a lot of gross rating points. Those budgets are becoming more and more difficult to come by…for both clients and their agencies. And it can be embarrassing if you are spending millions and all of the sudden your competition encounters a sociological “tipping point” that creates a whole new market for their hush puppies, terrycloth sheets or snake light.

What we are seeing is 1) much less of the formulaic hammering away in traditional media, 2) slightly less true new product innovation and 3) more product format and packaging innovation. Study a grocery cart of so-called new products or a trade magazine of industrial products and what you are more likely to see is packaging and service innovation, not true product innovation. We are also seeing a dramatic shift in the players and the channels. Goodbye Mr. Whipple; hello Oprah. Goodbye :30 TV commercial; hello facebook.

Traditional media channels, their spokesmen and the advertising, sales promotion tactics and spend rates that accompany them are on the wane. Or, at least they are being complimented and competed with by the more post-modern media formats, including and especially social media.

The Five Variables

So what are the variables? In the classic model, there are five: 1) relative advantage 2) compatibility, 3) simplicity, 4) trialability and 5) observable results. Everett Rogers estimates that these variables account for between 49 and 87% of the variation in adoption incidence and rate. In other words, more than half of the success of a new product can be predicted by just five factors. Let's discuss them less cursively.

Relative Advantage	A product can have an advantage over another product in its current category or in other categories of indirect competitors. Or, it can create a whole new category or way of doing things. To the extent a product or service delivers a benefit that competitive products cannot deliver, or do not deliver as well, it has relative advantage. Benefits can be categorized into economic benefits, utilitarian benefits, functional benefits or psychic benefits. If I look better because I use it, that might be a functional benefit or a psychic benefit. If the product allows me to do something I can't do without it, that is probably a utilitarian benefit. If the product saves me money or makes me money, that is an economic benefit. Different products obviously have different benefits, different "benefit sets" and varying potential for benefits to be effectively realized or noticed. Perception of the benefit is the key.
Compatibility	Some products, though magnificent in concept or even in technical capability, may not be compatible with existing technology, social or personal value structures. Why aren't we all driving hydrogen cars? Simple, you can't fill them up easily or quickly. The same goes for the electric car, the infrastructure isn't there to make longer trips feasible. Why won't sub-Saharan African men wear condoms to prevent the spread of AIDs? Their value structure prohibits it. They would literally rather die. On the other hand, products that fit well into existing frameworks are easier to incorporate into a lifestyle.
Simplicity	Simplicity is simple. Is it easy to do? Or, is the cure going to be worse than the disease? This is the calculus we are all making on a minute by minute basis. Why did it take ten years for bank checking account customers to adopt on-line bill paying? Because customers perceived that it was too complicated. Eventually the bank showed a woman in her kitchen with two kids screaming, the TV blaring and the dog full of mud. She was still able to pay three bills in the middle of her chaotic day. Good commercial. Ideally, the product isn't just simple, it facilitates simplicity.
Trialability	Increasing trialability is about decreasing risk. In other words, attempting to control the relationship between perceived benefit and perceived cost. Most of us, save the small percentage of us who are "early adopters" don't like risk. We prefer the s-words: safety, security and the status quo. Every product, particularly a new product, can benefit from the stripping away of the risks associated with its usage. In the old days, these amounted to little more than hucksterism. The "30-day money back guarantee" and most of the tactics associated with late night infomercials. The newer model is that employed by many internet distributed products which allow a basic version at no charge along with a host of possible paid upgrades. The smartest ones allow you to go at your own speed and prompt you to upgrade when you self-select a "premium feature."
Observable Results	Until further notice, most of what is bought is purchased by humans. In business to business environments there is "cost rationalization," "supply chain management," "reverse auction," and "performance contracting." In the consumer world there is the family budget, the recession and the jobless recovery. In other words: "show me the money." In a focus group, when asked if people would pay $5 more per month for electricity produced from renewable resources, one woman asked if the electricity coming into her house would be different from that which came into her neighbor's home if she paid the premium. I said: "no, it's all the same juice." She said: "why would we pay more for the same thing?" I suggested that some people just felt it was the right thing to do. It turned out, at that time, that the utility company and the legislatures were the only people that thought that.

This paradigm helps explain why we are still struggling to replace the combustion engine with something else. Question, when was the electric car invented? Twenty years ago, fifty years ago, seventy five years ago? Try over one hundred years ago. Here are some of the attempts at electric vehicles over the ages.

1884

1944

1964

E'mo

Tesla

The first electric car was manufactured and put into distribution in 1884. But it didn't have "relative advantage." They tried it and tried it and tried it. It isn't compatible with the fuel distribution systems that obviously have to be there along the way. Recent efforts were available at substantial premiums. You have to own the vehicle for longer than is realistic to get close to a ROI on the premium you had to pay for that 2002 Prius. Or, you have to really want to not use petrochemicals. The first production Tesla (electric car shown above) seats two and goes from zero to sixty in a very short amount of time, and it does so without making a peep. When they bring the four door sedan to market at roughly half the price they will have dealt with at least some of the variables that drive diffusion.

Let's look at the other end of the spectrum. Take, for example, the flip video camera. It's affordable, its portable, it plugs into my computer, it has one button and just four arrows, the software is loaded and it is essentially a visually oriented product. You can view your video instantaneously on the screen embedded in the device or you can plug it in and watch your new creation on your computer.

Whammo, if you don't already have one, you'll get one in your stocking next year. It appears to be a product designed around the concepts of relative advantage, compatibility, simplicity, trialability and observable results.

The implication is that you can either take your chances with respect to the above variables or you can design with intentionality. Some products are inherently more likely to break through the barriers; others are more challenged. Logically, the more of the variables you can address prior to launch, the more likely you are to succeed. As we move further into a post-modern culture, it is less likely that one-size-fits-all products and the production mentality that accompanies them are going to be successful. Downloading your own ring tone, naming your price for your insurance policy and "pimping" your ride are the orders of the day. The preeminent product strategy is one of mass customization, personalization and/or artisanal products that don't look or feel much like their mass produced ancestors.

Discovering the Opportunity Areas

What are the specific strategies that can drive or accelerate adoption? Most of our clients have products. So, the question becomes: how can we enhance revenue through the introduction of new products or the introduction of existing products into new opportunity areas?

Our model systematically explores changes in six opportunity areas:

1. Product Change. This can include the introduction of a new product, feature enhancements, value adding, non-product relationship drivers, and sizing.

2. Packaging & Pricing. This area allows that identical or nearly identical products can be packaged in ways that add utility through trialability, portability, convenience, resealability, etc. making the product more appropriate for different users groups. Similarly, pricing can change along with other product and packaging tactics to reinforce imagery and improve margins.

3. Market Change. Markets can be defined by demographics, psychographics, need states and shopping or consumption behavior. Each of these can be explored to find segments or niches around which products and programs can be designed.

4. Channel Change. This opportunity area explores expansion through opening of new physical, communications and social (or viral) channels.

5. Geography Change. Geographic expansion remains a key strategy for many marketers seeking increased revenues particularly as sales outside the U.S. become more practical for more companies.

6. Experience Change. How can the "experiential context" that surrounds the product before, during and after the sale be changed? What can be added or removed that does not relate directly to the core product to help change perceptions through the right associations.

Obviously, the above set of opportunity areas do not represent a mutually exclusive set of strategies. More typically, these are used together to create a new product design or offer. We do, however, treat them as discrete areas in candescence ideation workshops and focus groups designed to discover new ideas.

Understanding Post-Modern Influence

We believe the strategic choices mentioned above are best viewed through the lens of post-modernism. The post-war, "modern" culture that dominated the second half of the 20th century has been eclipsed by a newer sensibility. The post-modernist shuns authority figures, "one-way" communications from so-called authorities and the mass production mentality that built corporate America and created the powerful consumer culture we live in today. Post-modernists are educated, skeptical and self-confident in their choices. Mass media advertising, to name one example, has been replaced to a great extent by more intimate "peer-to-peer" communication networks. A few of the implications…

Revolution. Post-modern consumers are more likely to consult trusted friends, relatives and other product users who they have "followed," "friended" or are "linked with." Accelerating sales growth is often dependent on tapping the right consumers through social networks and understanding the influence of different networks. Each network has its own etiquette and most of the networks are primarily designed for social, not commercial, purposes. It is okay to "meet them where they live" but it usually not okay to hard sell them through a social platform.

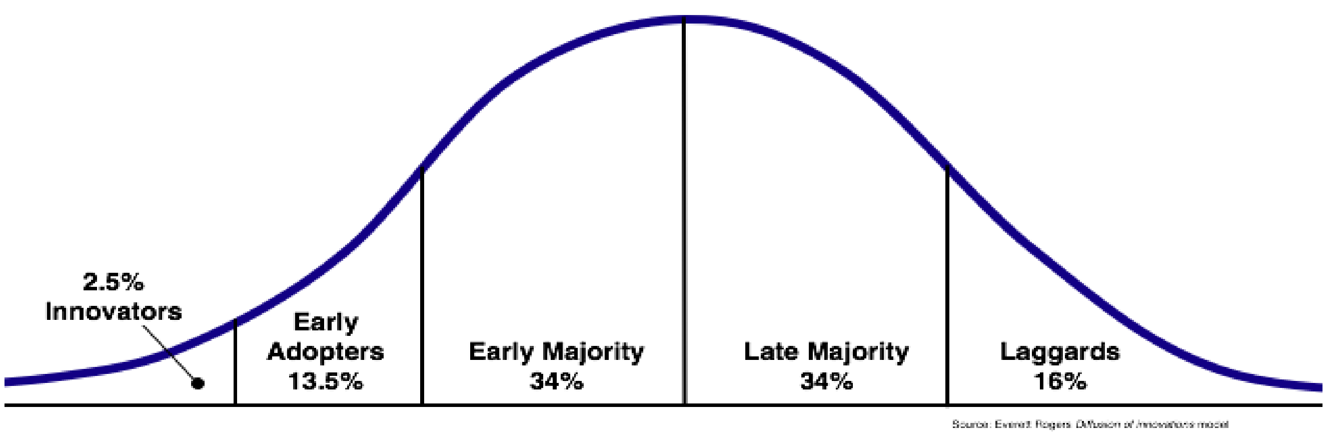
Since diffusion of innovation has always relied heavily on word of mouth and informal social networks, the social media revolution has to be a key component. The key is to understand that these networks exist because of powerful and fundamental changes in the way people collect and receive information. They are both tools for, and symptoms of, a changed culture. For marketers that understand the new and emerging environment, they can be powerful tools. To the less skilled, they can "unsell" something just as fast as they can sell it.

Reinvent. Reinvent. Reinvent. The post-modern world is a more fluid environment where products are changed on a virtually continuous basis. A new product launch is no longer properly viewed as an event so much as the beginning of an ongoing process. Success often depends on the invitation of the consumer or user into the process. Increasingly products are co-designed by their user groups as manufacturers seek more ways to solicit information to improve the functionality of products. The mentality is less about *selling to them* and more about *working with them*. Who owns the brand? They do.

Don't Chase Your Tail. We are all familiar with the stages of adoption. At some point you have to challenge some of the assumptions. Marketing used to, to a great degree, target the innovators and early adopters. The premise was that a product pushed through the curve and that it was "just a matter of time." The even more primitive logic was that an innovator is an innovator. It was a personality type. Some people just move faster, tolerate risk, are fashion conscious, etc.

A more real-world paradigm recognizes that some products will only go so far through the curve in their initial configuration (after all, it is an *up hill battle*). Further inroads, i.e. market penetration, will depend on new product sizes, features, pricing strategy, channels, messaging, etc. You adapt to the market or market segment; it doesn't adapt to you. The other real-world realization is that most of us don't fit neatly into one of the spaces below. You could be a late adopter on smart phones but have a $4,000 tennis racket made out of Kevlar. Most of us aren't "level" across all of our purchase categories and accordant lifestyles. We allocate interest and wallet according to our own proclivities.

A more prudent and profitable approach may be to allocate marketing resources to the middle—as opposed to the "tails"—of the curve in many product categories, particularly if you do not have "first mover" advantage. The logic being that the innovators and early adopters have already moved; the laggards are never going to get it. The emphasis, therefore, becomes product design in "Phase II" to meet the requirements of the Early Majority. Of course, once the psychology of this group is understood, a number of targeting, channel and post-purchase strategies are also worth considering.



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