



The Principles of Adoption and Diffusion¹

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New products or fashion ideas don't just sweep through a population overnight, they spread slowly and predictably like dye poured into a bathtub. Diffusion theory attempts to explain the spread of an innovation through a group or society. Most new products are unsuccessful because they don't find a market. In fact, the failure rate is over 90%. What can a company do to protect its investment? It can attempt to control the spread of their innovation by placing specific types of information in appropriate media at strategic times to reach a specific audience. Adoption is the acceptance of an innovation by a group member. Diffusion is the spread of an innovation among a group.

Diffusion is a process. It requires key elements to be successful. First, there must be an innovation, something that is perceived as new to that particular group. Second, there must be a series of channels through which the group normally communicates. Third, there must be time for word of the innovation to spread. Some new ideas, like telephone answering systems, spread rapidly. Others, like public acceptance of the metric system, take much more time. Fourth, there must be a clearly defined and easily-reached group (college students in America, as opposed to young people worldwide).

The Process

1. innovation
2. communicated through channels
3. over time
4. among members of a social system

To understand diffusion of innovation you first have to understand the adoption process. An innovation will be successfully diffused through a specific population when there the following four situations exist:

First, the element to be adopted must be perceived as an innovation by the audience. If they believe that the innovation (or something like it) is currently in use in the population, it will not be adopted.

Second, the group that will adopt the new element must be connected by existing communication channels. If the people who would adopt the new item (say, a new type of printer) are not in contact with each other, they cannot diffuse the information and adopt the product.

Third, diffusion must have adequate time to occur. The microwave oven took over twenty-five

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years to be accepted by the public, the CD player took just six years, and the "pet rock" phenomenon of the early 1980s took just six months. Diffusion occurs at different rates for different innovations, so the time for adoption varies. Below is a graph that illustrates the time rate associated with the adoption of the microwave oven:

Fourth, diffusion can only occur when the word spreads among members of some social system. In the diffusion process, some people are innovative and some people are not. In addition, some people will adopt early and some people will adopt later. For adoption to work, all these people must be in the population. Innovators will not adopt if they don't think they are leading the way for a general public that all will accept the innovation. By the same token, late adopters are not interested in accepting something new that hasn't been already accepted by a large group in the population. However, similar people are not necessarily in the same social system. The people who are interested in trying a new printer in Italy may have no contact with the people who are willing to adopt that printer in the United States. Therefore, they are not in the same social system and must adopt separately.

Characteristics Necessary for Adoption

1. advantage
2. compatibility
3. complexity
4. reliability

Members of a group will be motivated to adopt only when they perceive that a new product or innovation has the appropriate characteristics to meet their needs. They must first of all see the advantages of the new product over the old one. For instance, before the expense is justified, they must see benefits offered by a compact disc player that aren't available in cassette tape player. Secondly, the innovation must be compatible (or adaptable) with the present system they are using. Third, they must perceive that the new innovation is simple enough for them to use. Many people still haven't adapted to computers because they

are intimidated by the language or characteristics of the different types and systems. Fourth, before they adopt, the group must be sure that this innovation will reliably solve their problems without causing frustration and additional expenses. Those people who bought Beta Max video players or knew someone who was unhappy with a Commodore computer system, will not adopt when they aren't sure of the differences between IBM and Apple.

Stages

1. Awareness
2. Interest-information
3. Evaluation-decision
4. Trial
5. Adoption

The adoption process is a MENTAL process through which an individual passes from first hearing about a new idea until it is adopted. The process is the same whether it is an auto mechanic buying a cellular phone or a family doctor who is trying out a new medicine. But the differences in the innovation and in the members of the group will cause the innovation to spread at different speeds within the various groups. For instance, an intensive-care heart specialist might be more likely to try a new drug than a cruise ship doctor. The reason? The intensive care doctor tries all kinds of new drugs to meet crises situations. New drugs are a fact of life for this individual. However, the cruise ship doctor is cut off from the normal medical community. Therefore, with little information and no history of the adoption of new drugs, the cruise ship doctor would be much harder to persuade to try the new drug.

How can you persuade people to change their behavior and adopt something new? You can break them down into logical groups and then lead them through the steps all people have to go through before they can adopt. Although it sometimes seems that adoption is so fast and simple that there aren't any particular stages, the fact is adoption always follows five steps or stages. First, the potential adoptee has to become aware that there is a new idea or product available that might meet his or her needs. Second, the

individual must become interested enough in the innovation to pay attention to the information available or seek new facts about that new idea or service. Third, after sufficient information has been made available, the individual must choose the most efficient or fulfilling alternative. Fourth, the individual must be able to try the innovation in a setting that they perceive as being comparable to their own situation. A farmer won't adopt a new variety unless it is tried on a farm like his or hers. If it is demonstrated at a well-funded research center, it will be perceived as being different. Fifth, and finally, the individual must be mentally, physically and financially able to adopt the innovation.

For each individual, and for each type of innovation, the time elements for each of these stages will differ. Some people evaluate new ideas slowly but adopt quickly after they've made their decision. On the other hand, some products or services can be chosen quickly but take a long time to implement.

In the diffusion process, the stages are always the same, but depending on the individual or the product, the timing is always different. A Fax machine is like a copy machine and fairly inexpensive, so a business man or woman might be able to choose that product quickly. Products that are like products we have already adopted and are pleased with are easy to adopt. However, a product like a portable, self-powered, \$50,000 satellite information linkage between Realtors would be harder to sell to a real estate brokerage than a cellular phone.

As each individual passes through each stage they will be ready to move on to the next level. However, if the individual experiences uncertainty about the next stage, they can always fall back and repeat the last stage until they gain confidence in their ability to complete the next step.

Potential adopters are each members of various groups that come into the diffusion process at different times and accomplish the adoption at different speeds. Individuals vary according to the ability to proceed through this process because they have different self perceptions and aptitudes. For instance, some people are extremely innovative and are eager to try new products. Others, on the other hand, will try new products, but are afraid they might be unsuccessful, so

they resist new products. A third group, the laggards, resist change at all costs. This group, the ones who see themselves as failures, have been unsuccessful in adopting new products in the past. In many cases, these individuals have been hurt very seriously by past purchases or expenditures.

What makes individuals susceptible to change? Part of it is their attitude as a result of past successes or failures, but another part of it is the personality of the individual. Research into differing personalities goes back through psychologists Maslow and Carl Jung all the way back to the greek philosopher Hippocrates. According to personality theory each of us is either outgoing or introspective. In addition, this theory holds that each of us is either fact-oriented or intuition-oriented and that we are inclined to either jump at new ideas or we are determined to look at all aspects of a decisions. As a result, these tendencies combine to make us either innovative ("let's change it"), early adopters of new ideas ("let's get it done"), or less innovative and average members of the population ("let's keep it"). By knowing what part of the population each person is, you can correctly pick a message that will be well-received by each group and you can determine the exact time in the diffusion process to send it to each group.

By knowing the inclinations and attitudes of the various groups, people can control the acceptance of new ideas or products by the public. Diffusion doesn't just describe the flow of fads or fashions or new inventions, it describes how the various groups react to everything new in their life. For instance, innovators love to be the first to view a new movie, especially when it turns out to be a big hit later. Early adopters like to see the movie that just opened last week and was a huge successes. The late majority, on the other hand, like to go to a movie that is billed as being in it's "eighth smash week!" And the laggards, the last piece to fit into the puzzle, see the movie after it's moved out of the mall to the small theater with the one dollar showing. Actually, since it only costs a dollar more, they'd prefer to wait even longer and see on their video recorder, but they can't because it's a Betamax and the rental units are all VHS.

Groups

Innovators: 2.5%

- Scientifically oriented
- Highest social status
- More venturesome (but, can be innovator for computer and laggard for food)
- Leaders in statewide or national organizations
- Very well educated
- See themselves as "winners"
- Personality type: Extrovert, Intuitive
- These individuals are people-oriented leaders who trust their hunches.

Early Adopters: 13.5%

- Perceive themselves as progressive not venturesome (must see someone else use it)
- Leaders in local organizations
- High social status
- Well educated
- Personality type: Extrovert, Sensing
- These individuals are moderately people-oriented and strongly fact conscious. They want to see what is successful and try it before others.

Early majority: 34%

- Slightly above average education
- Slightly above average social standing
- Personality type: Introverted, Intuitive
- These people are followers who trust their imagination and instincts.

Late majority: 34%

- Average education

- Average social standing
- Personality type: Introverted, Sensing
- These people are followers who don't trust hunches. They want to see a clear record of success.

Laggard: 16%

- Resist change
- Can't afford new ideas
- See themselves as losers in this category
- Personality type: Introverted, Perceptual
- These people are the last to decide whether something will work. If something is going to fail, they want to give it time.

Characteristics of Potential Adoptees

Innovators and Early Adopters

- Wealthier
- Younger (20 to 25 years old)
- Technology-oriented
- Risk takers
- Well-educated
- Opinion leaders
- Read technical publications:
 - Science
 - Scientific American
- Mass media use?
 - TV:
 - PBS sometimes

'Discovery' often

- Radio:
News/talk

- Movie:
Science fiction

- Have cellular phone

- Have fax at work
Sometimes at home

- Self-perception:
 - more intelligent
 - leader (related)
 - more successful as an adopter (related)
 - admired

Majority

- Average income
- Average education (high school)
- Age 35 to 50
- Receptive but not actively seeking change
- Have adopted successfully many times
- Reads popular periodicals:
 - Time/Newsweek
 - People
 - Reads newspaper and is interested in technology stories
 - Seeks out others who are trying new products (VCR, CATV)
- Participates in groups
- Media:

- TV:

Sit-coms (people like them)

Mass media

Concerts and shows

- Radio:

Middle of the road rock or new-wave country

- Movies:

Action adventure

- Self-perception:

- Intelligent, but not TOO intelligent
- Will take logical risks
- Looked up to by most

Late Adopters

- Poor
- Undereducated
- Security minded
- Today oriented
- Age 50 to 60
- Average education (Jr. high school)
- Not receptive, opposing change
- Have adopted unsuccessfully a few times
- Do not read
- Perception of those who read? Poor
- Reads newspaper seldom and is interested in stories about people getting rich or lucky

- Avoids others who are trying new products (Car phones)

- Self-oriented

- Media:

- TV:

Entertainment, no message

Mass media

- Radio:

Rhythm and Blues, Funk, Old-time

country

- Self-perception:

- Not the smartest

- Never get a break

- Misled by others

- WHY TRY?

When an innovation is diffused through a population it follows a time cycle very much like a new product life cycle. It follows an identifiable pattern over a specific period of time and it has a clear and recognizable beginning and middle and end. By analyzing the innovation in terms of the diffusion process, you can speed up the acceptance process or stretch out the expected lifetime that it is used by the intended audience.

(Time for adoption could vary from one year to fifty years or more.)

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The following are media that farm-oriented adopters prefer during the various stages (Table 1).

FOR THE ADOPTION STAGE, PERSONAL EXPERIENCE IS MOST IMPORTANT

Table 1. Media preferred by farm-oriented adopters.

Awareness stages (hear it)	Interest stage (seek info)	Evaluation stage (try mentally)	Trial stage (test)
Mass media (TV, Radio, newspapers, magazines)	Mass media	Friends, neighbors	Friends, neighbors
Government	Government	Friends	Friends and neighbors
Government	Government	Dealers and industry members	Dealers sales people
Mass media	Mass media	Dealers, sales- persons	Dealers and salespeople