

“Attributes of Innovations and Their Rate of Adoption”

Diffusion of Innovations

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Notes on Chapter 6 & 7

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SP 723

Variables Determining the Rate of Adoption of an Innovation (Rogers, 1995)

1. Perceived attributes

- Relative Advantage
- Compatibility
- Complexity (Simplicity)
- Trialability
- Observability

2. Type of Innovation-Decision

- Optional
- Collective
- Authority

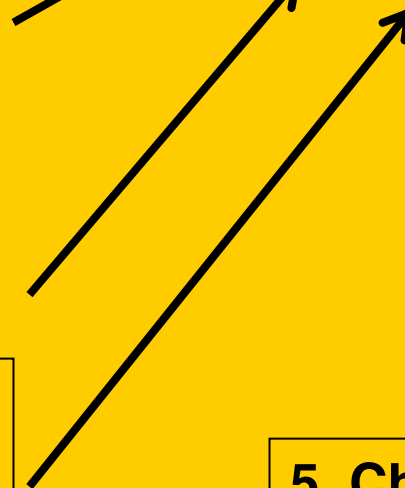
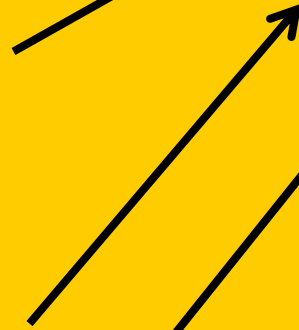
3. Nature of Social System

4. Communication Channels

- Mass Media
- Interpersonal

Rate of Adoption

5. Change Agent's Promotion Efforts



Postdiction vs. Prediction

- Variables such as “relative advantage” or “compatibility” have been derived from PAST RESEARCH... but they can also be used to predict the rate of adoption of innovations in the future.
- Such prediction is sometimes called “acceptability” research and can be used to position an innovation so that it will be more acceptable / successful

Approaches to Prediction Research

- Investigate the acceptability of an innovation in its pre-diffusion states, such as when it is being test-marketed or evaluated in trials (pilot tested);
- Extrapolate from the rate of adoption of past innovations into the future for other, similar innovations
- Describe a hypothetical innovation to potential adopters and determine its perceived attributes, so as to predict its forthcoming rate of adoption

Innovations that Failed – N-Trak

- Instead of retrospectively studying innovations that succeeded in diffusing, you can also study innovations that failed.
- Example: N-Trak soil nitrogen test kit by Hach Co.
 - Little relative advantage (labor intensive and time consuming, especially in a busy crop season)
 - Labs reduced testing prices, so comparative advantage of user-testing was diminished
 - Observability was low – an entire crop season had to pass before knowing results

Relative Advantage

- One of the strongest predictors of an innovation's rate of adoption
- Relative advantage = $\frac{\text{expected benefits}}{\text{costs of adoption}}$

compared to earlier product or service.

What are some of the different
aspects of
relative advantage?

Relative Advantage – Some Aspects

- Financial – e.g. when a new product's price decreases dramatically – rapid adoption is encouraged.
e.g. VCR 1980 = \$1,200. Today < \$50
- Other Savings - time, effort
- Social Prestige – sometimes these are fads, aspirational products, e.g. clothing fashions, new cars, hair styles, athletic shoes
- Comfort / decrease in discomfort
- Immediacy of reward (“instant satisfaction” ... in contrast to “preventive innovations” which don't show reward... or gives delayed reward)

What are some of the relative advantages of our team's innovations?

Or...

How would we rank our various relative advantages?

Preventive Innovations

- No instant satisfaction
- The relative advantage is highly uncertain
 - e.g. use a condom, don't get HIV/AIDS
 - e.g. use of seat belts
 - 73% of Americans use seatbelts = lowest in industrialized world. Of 30,000 killed in auto accidents, 60% NOT wearing seatbelts.

**But... Preventive Innovations CAN
be successful!**

HOW?

Preventive Innovations can be successful! – through **Communication Campaigns!**

Example: Stanford Heart Disease Program

A communication campaign seeks to:

1. Generate specific effects
2. ... on a relatively large number of individuals
3. ... within a specified period of time
4. ... through an organized set of communication activities...

Stanford Heart Disease Campaign

- Used “formative research” = behavioral research “conducted early in a communication campaign in order to create more effective messages” (p.86)
- Health messages were pre-tested on their intended audiences to find out
 - If they were understood?
 - If they had the intended effects?
- Campaign messages showed positive role models for healthy living who were credible individuals who had lost weight, etc.
- Stanford Campaign showed that preventive innovations can be successful, but require special efforts, especially to emphasize the relative advantage of preventive innovations (an educational process)

Can you think of a

Communication Campaign

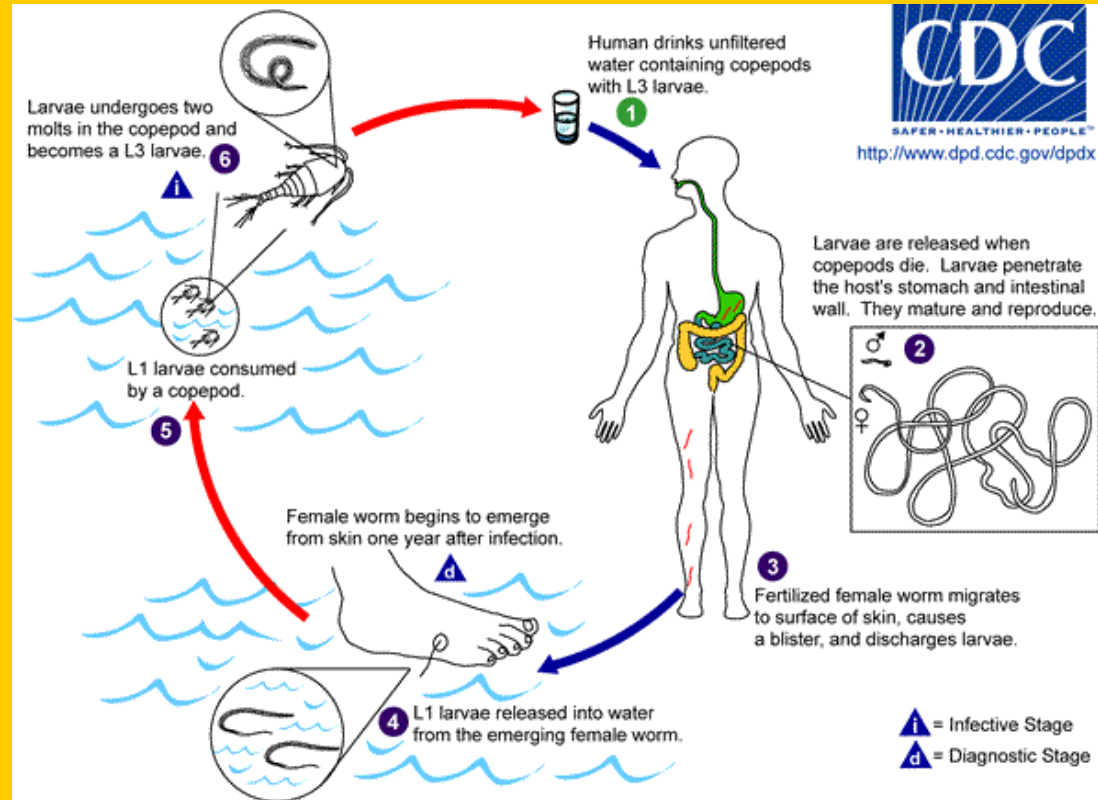
to which you have been exposed?

Guinea Worm Eradication Campaign

Key Objectives

- Twenty Year Campaign: 1986 – 2006, initially focused on Ghana;
- Leadership: Carter Center leads the campaign;
- Partnership: CDC, WHO, UNICEF, Ministries of Health and many other partners;
- Achievements: 99.5% reduction from an estimated 3.5 million cases in 1986 to 11,510 reported cases in 2005.
- Current Focus: The Carter Center continues to concentrate on the countries with the heaviest burden of Guinea worm disease: Sudan, Ghana and Nigeria. Sudan represents almost half of all reported cases, as many parts of the country are inaccessible to health care workers due to a 21-year civil war.
- Global Monitoring of Success WHO/UNICEF provides data, mapping and monitoring.

Guinea Worm



Cloth Filtration for Guinea Worm Removal



Image removed due to copyright restrictions. Please see
http://gamapserver.who.int/mapLibrary/Files/Maps/GuineaWorm_CertificationStatus_2007_LOWRES.png

Example of WHO/UNICEF “Health Map” Programme: <http://www.who.int/dracunculiasis/en/>

Cases of Guinea Worm – 2007

distribution by country of 9,571 indigenous cases

Image removed due to copyright restrictions. Please see Guinea Worm Wrap Up #180, April 11, 2008.

Incentives or Subsidies?

- Awarded to clients to speed up the rate of adoption
- Incentive: “direct or indirect payment of cash or in kind given to an individual or system in order to encourage behavior change.”
- Purpose of an incentive: to increase the degree of relative advantage
 - e.g. family planning incentives
 - e.g. cell phone minutes to TB patients who stay on their medicines

Incentive Types

- Adopter vs. diffuser
- Individual vs. system
- Positive vs. negative
- Monetary vs. non-monetary
- Immediate vs. delayed

Compatibility

- “Degree to which an innovation is perceived as consistent with existing values, past experience and needs of potential adopters”
 - An innovation can be compatible with
 - (i) social norms
 - (ii) previously introduced ideas
 - (iii) client need for innovation
- Example: Miracle rice triples yield – but not paying attention to consumer taste

Naming an Innovation

- Examples of good names
- Doctors without Borders -> Engineers without Borders
- Examples of bad names
- Nova in Latin America “no va” = “no go”

Indigenous Knowledge System

- Change agents sometime commit an “empty vessels fallacy.” What is that?
- Clients evaluate an innovation in terms of their prior experience with the practice the innovation will replace

Complexity

- Opposite of “user-friendly”
- Negatively related to the rate of adoption
- New ideas and products may exhibit barriers to adoption due to their complexity (e.g. computers for older people)

Trialability

- Positively related to rate of adoption

Observability

- Degree to which the results of an innovation are visible to others
- Example – safer sex for those at risk of HIV/AIDs – ambiguous idea, including abstinence and sexual monogamy as well as specific behaviors, such as condom use.
- This is hard to observe (“preventive innovation”). This may be one cause of slow rate of adoption

Name the Adopter Categories?

Adopter Categories

- Innovators (venturesome)
- Early adopters (respect)
- Early majority (deliberate)
- Late majority (skeptical)
- Laggards (traditional)

Characteristics of adopter categories?

- Socio-economic
- Personality variables
- Behavior

Socio-economic

- Early adopters are no different in age from late adopters, but...
- Early adopters have more formal education;
- More likely to be literate;
- Greater degree of upward social mobility;
- Higher socio-economic status.

Personality Variables

- Greater empathy
- Less dogmatism
- Greater ability to deal with abstractions
- More favorable attitude towards change
- Greater ability to cope with uncertainty and risk
- More favorable attitude towards science
- Less fatalism, greater self-efficacy

Communication Behavior

- More social participation;
- More highly interconnected in interpersonal networks;
- More cosmopolite;
- More contact with change agents;
- Greater exposure to mass media channels;
- Greater exposure to interpersonal communication channels.

What is the
innovativeness / need paradox?

What is the innovativeness/need paradox?

Individuals who most need the benefits of a new idea (less educated, less wealthy, etc) are generally the last to adopt an innovation. Those who adopt first generally need the benefits least.

Do we think that the Internet (or the \$100 laptop?) may offer a means to overcome the innovative/needs paradox?