

Planned Behavior Change: An Overview of the Diffusion of Innovations¹

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According to renowned change theorist Everett Rogers, the purpose of the Cooperative Extension Service has been to change human behavior by disseminating research (1963) and today is "one of the world's most successful change agencies" (2003, p. 391). The ability to facilitate behavior change among clientele is paramount to the success of Cooperative Extension. Clements stated: "Legislators agree that impact means behavior change" (1999, para. 4). This publication is designed to provide an overview of how the principles of diffusion can be applied to facilitate planned behavior change among Extension clientele.

Background

The idea of diffusion was first broadly introduced to the Extension profession in 1963 by Everett Rogers. Rogers wrote a two-part series appearing in the inaugural and second issues of the *Journal of Cooperative Extension* (now known as the *Journal of Extension*) detailing the appropriateness of the diffusion theory for Extension professionals and providing an overview of the relevant literature. In Part I, Rogers stated: "All Extension workers are change agents—professional persons who attempt to influence adoption decisions in a direction they feel is desirable" (1963, p. 17). He identified four areas of diffusion as significant to Extension:

1. The adoption process
2. The rate of adoption of innovations
3. Adopter categories
4. Opinion leadership

An overview of each area has been provided in the following subsections.

The Adoption Process

Rogers' theory states innovations diffuse through a social system over time:

- An innovation is "an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (2003, p. 12)
- Diffusion is defined as "the process in which an innovation is communicated through certain channels over time among the members of a social system" (2003, p. 5)

The rate of diffusion for an innovation is related to how potential adopters perceive the innovation, with the characteristics of the innovation itself coupled with certain factors affecting potential adopters together playing key roles in informing perceptions. Adopters move through five different stages as they determine if they want to adopt an innovation (Rogers, 2003):

1. Knowledge (gaining awareness of an innovation and how it works)
2. Persuasion (developing a positive or negative opinion about the innovation)
3. Decision (the process of choosing whether to adopt or reject the innovation)
4. Implementation (putting the innovation into use)
5. Confirmation (making a decision to continue or discontinue use of the innovation)

Li (2004) proposed, and Harder and Lindner (2008) confirmed, a sixth stage (no knowledge) to include individuals who have not yet heard of an innovation.

The Rate of Adoption of Innovations

There are five characteristics that influence how rapidly an innovation is diffused into a social system (Rogers, 2003):

1. Relative advantage (the extent to which an innovation is better than what it supersedes)
2. Compatibility (consistency with experiences, needs, and values)

3. Complexity (difficulty or ease in understanding and using the innovation)
4. Observability (the degree to which the results of adopting are visible)
5. Trialability (the extent to which the innovation can be tested before making a commitment to adopt).

Innovations diffuse most rapidly when they are perceived by individuals to have low complexity, with high relative advantage, compatibility, observability, and trialability (Rogers, 2003). Relative advantage and compatibility are considered to have the most influence on the rate of adoption. Certain factors, often called barriers, can negatively affect how individuals perceive the characteristics of an innovation and the speed with which it is diffused.

Adopter Categories

Individuals can be sorted into five categories based upon how quickly they adopt an innovation (2003):

1. Innovator
2. Early adopter
3. Early majority
4. Late majority
5. Laggard

Innovators are the first individuals to move through the stages of the innovation-decision process, followed by early adopters, early majority, late majority, and finally the laggards. The categorization of an individual as a specific type of adopter is influenced by the speed with which the individual moves through the innovation-decision process.

Opinion Leadership

According to Rogers, people seek out information from opinion leaders, or those who "serve as a model for the innovation behavior of their followers" (2003, p. 27). For example, this may be the most socially connected farmer or the 4-H volunteer whose opinion is well respected by other volunteers. Since opinion leaders have the power to influence the people who follow them, their support is critical to Extension's ability to promote change. Innovations are more likely to gain popularity within a social system when opinion leaders are supportive; conversely, opinion leaders can hinder the diffusion of innovations they perceive negatively. Thus, Extension professionals are encouraged to integrate opinion leaders into their programming.

Relationship to Program Development & Evaluation

The Logic Model is the standard model for program development for Florida Cooperative Extension. As demonstrated in Figure 1, the Logic Model begins with conducting a situational analysis and needs assessment. Similarly, the diffusion process begins after an innovation has been developed to solve a recognized need. It is most appropriate to begin considering factors affecting the diffusion of an innovation after the needs assessment phase of program development. Doing so will ensure an innovation is not promoted for the sake of innovation itself, but because it provides a solution to an identified need.

Careful planning is a precursor to behavior change and "critical to [the] effective functioning of the adult education organization" (Boone et al., 2002, p. 76). Program planners may find it most useful to consider diffusion factors during the input and output stages of the Logic Model. As an example, refer to [Addressing Labor Needs by Understanding Grower Perceptions about Adoption of Automated Nursery Technologies: A Resource for US Extension Professionals](#). This publication demonstrates somewhat mixed perceptions of automated nursery technologies among U.S. nursery and greenhouse growers with perceived compatibility having the greatest influence on future adoption (Warner et al., 2022). Inputs include volunteers, time, technology, and partners. Outputs are the activities that will be conducted and the participation of the target audience. Extension agents will be able to speed up the rate of an innovation's adoption through the consideration of diffusion factors while planning inputs and outputs.

Program Action - Logic Model

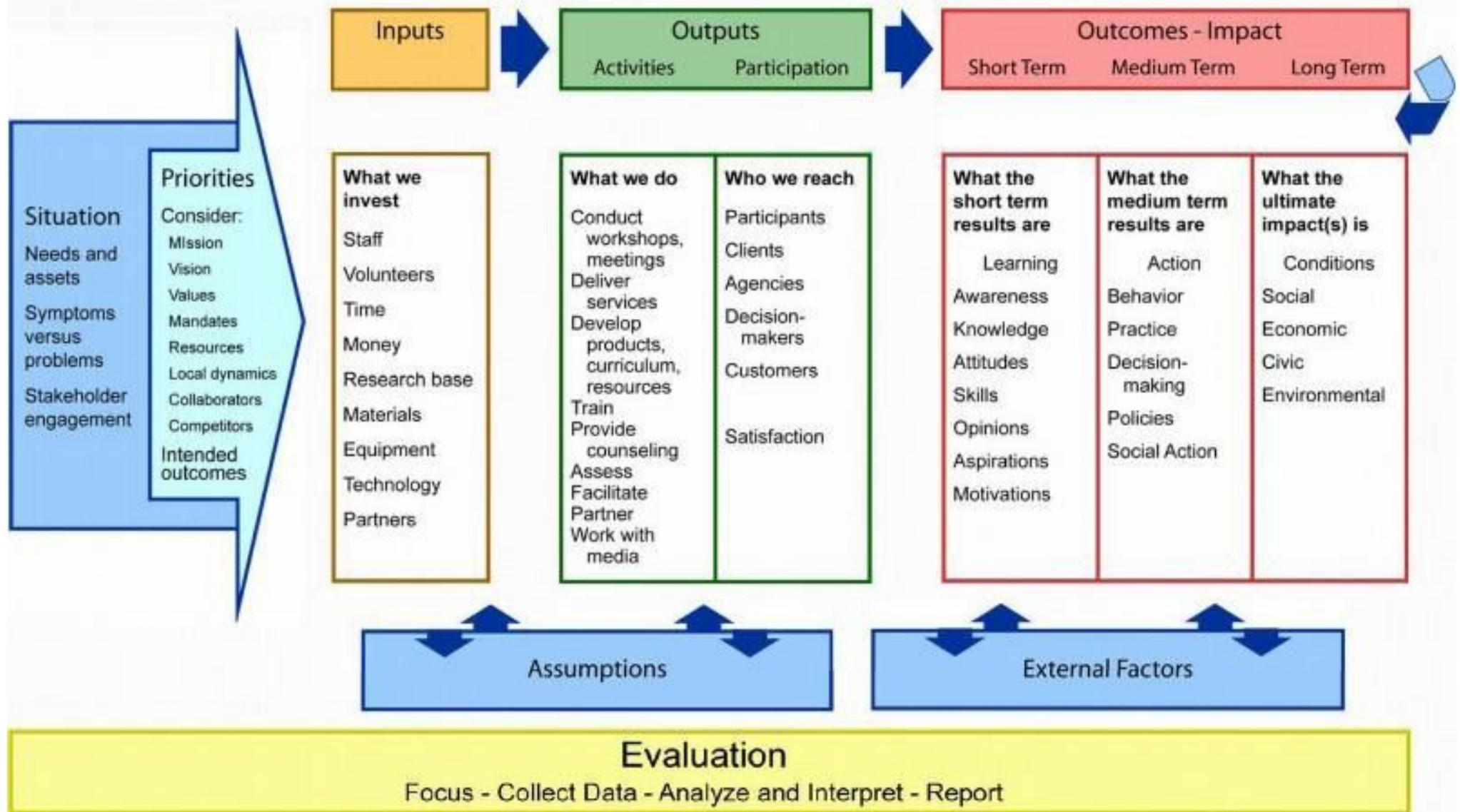


Figure 1. The Logic Model.
Credit: University of Wisconsin-Extension

Summary

It is possible to enhance our opportunities for success in Extension by focusing on the factors related to diffusion. Studying the characteristics of an innovation may help us determine what to highlight in our marketing, such as when an innovation is less expensive, increases profit, or is compatible with community values. Recognition of adoption as a multi-step process yields educational strategies that are better tailored to meet clientele needs. Similarly, knowledge of the adopter categories and opinion leadership concepts can help us to map our audiences more accurately and guides us in choosing the communication channels most appropriate for each category. By applying the principles of diffusion to program development, Cooperative Extension can increase its effectiveness as a change organization.

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