Chapter 5
DOI Theoretical Framework:
Adopting Innovative Technologies

ABSTRACT

Change is not easy! People adhere to old routines and habits tenaciously. Most people are slow to accept new ideas, new products, in short, innovations. When it comes to new technologies that can aid in adaptation to climate change, there is fierce resistance from farmers (to sustainable agriculture), from the fossil fuels industries (to sustainable energy), from developers (to going green), and the list goes on. While a new technology does involve a certain investment of time and money at first, it is cost effective and profitable in the long term. When it comes to sustainability, nothing less than the future of our planet is at stake, so it is incumbent upon us to find a way to "sell" the innovations to the masses. The Diffusion of Innovations (DOI) Theoretical Framework provides an effective, structured means of doing this; its efficacy has been established for hundreds of innovations, and it is particularly suited to technologies.

INTRODUCTION

DOI Theory was the brainchild of Everett M. Rogers, who was born on his family's farm in Carrol, Iowa in 1931. As a child, Rogers observed the reluctance of his father to adopt a new hybrid seed corn, even though it was drought-resistant and yielded 25 percent more crop. Drought hit the farm in 1936 and the hybrid seed corn in a neighboring farm survived while the corn

on the Rogers farm wilted. This experience made an indelible impression on the young Everett Rogers. He wondered why some farmers adopted innovations while other resisted innovations. Rogers enrolled in Iowa State University and studied rural sociology and the diffusion of agricultural innovations (Rogers, 2003). Out of his early work in diffusion of agricultural innovations arose an interest in a general theory about adoption of innovations. He developed a generalized diffusion theory, and posited that his theory explained social change. Today DOI Theory is widely used around the globe for a variety of fields. It is the theoretical framework of choice for the diffusion of new technologies in adaptation to climate change.

DIFFUSION OF INNOVATIONS THEORY

Everett M. Rogers seminal work, *Diffusion of Innovations Theory*, was first published in 1962. He continued to update and publish revised editions (Rogers, 1983, 1995, 2003) until a year before he died. By the time he wrote his fifth and final edition of *Diffusion of Innovations* (2003), DOI theory had become so widely accepted as a valuable framework for social change that Rogers estimated that there were some 5,200 publications about *DOI* Theory.

Rogers (2003, pp. 11-12) defined innovation as "an idea, practice, or object that is perceived as new by an individual or other unit of adoption" and diffusion as "the process in which an innovation is communicated through certain channels over time among the members of a social system." Following are the four main elements in DOI Theory:

- Innovation;
- Communication channels;
- Time;
- The social system.

Innovation

Rogers noted that the perceived characteristics of an innovation influences its rate of adoption. He (2003) listed five characteristics as the most predictive of the adoption rate:

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