

LECTURE 5

INNOVATIONS AND COMMUNITY (CONT'D)

Technology Adoption Process

The contribution of new technology to development can only be realized when and if the new technology is widely diffused and used. Diffusion itself results from a series of individual decisions to begin using the new technology, decisions which are often the result of a comparison of the uncertain benefits of the new invention with the uncertain costs of adopting it. Unlike the invention of a new technology, which often appears to occur as a single event or jump, the diffusion of that technology usually appears as a continuous and rather slow process. Yet it is diffusion rather than invention or innovation that ultimately determines the pace of economic growth and the rate of change of productivity. Until many users adopt a new technology, it may contribute little to our well-being.

Everett Rogers concepts and theoretical framework (model) of technology diffusion are widely applied in political sciences, economics, public health policies, history or education. Rogers defines the diffusion —as a process by which an innovation (technology) is communicated through certain channels over time among members of a social system.

Diffusion of Innovations

Diffusion of Innovations seeks to explain how innovations are taken up in a population. An innovation is an idea, behaviour, or object that is perceived as new by its audience. Diffusion of Innovations offers three valuable insights into the process of social change:

- What qualities make an innovation spread successfully?
- The importance of peer-peer conversations and peer networks.
- Understanding the needs of different user segments.

These insights have been tested in more than 6000 research studies and field tests, so they are amongst the most reliable in the social sciences.

a) What qualities make innovations spread?

Diffusion of Innovations takes a radically different approach to most other theories of change. Instead of focusing on persuading individuals to change, it sees change as being primarily about the evolution or —reinvention of products and behaviors so they become better fits for the needs of individuals and groups. *In Diffusion of Innovations it is not people who change, but the*

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innovations themselves. Why do certain innovations spread more quickly than others? And why do others fail? Diffusion scholars recognize five qualities that determine the success of an innovation.

i) **Relative advantage:** This is the degree to which an innovation is perceived as better than the idea it supersedes by a particular group of users, measured in terms that matter to those users, like economic advantage, social prestige, convenience, or satisfaction. The greater the perceived relative advantage of an innovation, the more rapid its rate of adoption is likely to be. There are no absolute rules for what constitutes —relative advantage. It depends on the particular perceptions and needs of the user group.

ii) **Compatibility with existing values and practices:** This is the degree to which an innovation is perceived as being consistent with the values, past experiences, and needs of potential adopters. An idea that is incompatible with their values, norms or practices will not be adopted as rapidly as an innovation that is compatible.

iii) **Simplicity and ease of use:** This is the degree to which an innovation is perceived as difficult to understand and use. New ideas that are simpler to understand are adopted more rapidly than innovations that require the adopter to develop new skills and understandings.

iv) **Trialability:** This is the degree to which an innovation can be experimented with on a limited basis. An innovation that is trialable represents less uncertainty to the individual who is considering it.

v) **Observable results:** The easier it is for individuals to see the results of an innovation, the more likely they are to adopt it. Visible results lower uncertainty and also stimulate peer discussion of a new idea, as friends and neighbours of an adopter often request information about it.

According to Everett Rogers, these five qualities determine between 49 and 87 percent of the variation in the adoption of new products. These five qualities make a valuable checklist to frame focus group discussions or project evaluations. They can help identify weaknesses to be addressed when improving products or behaviours.

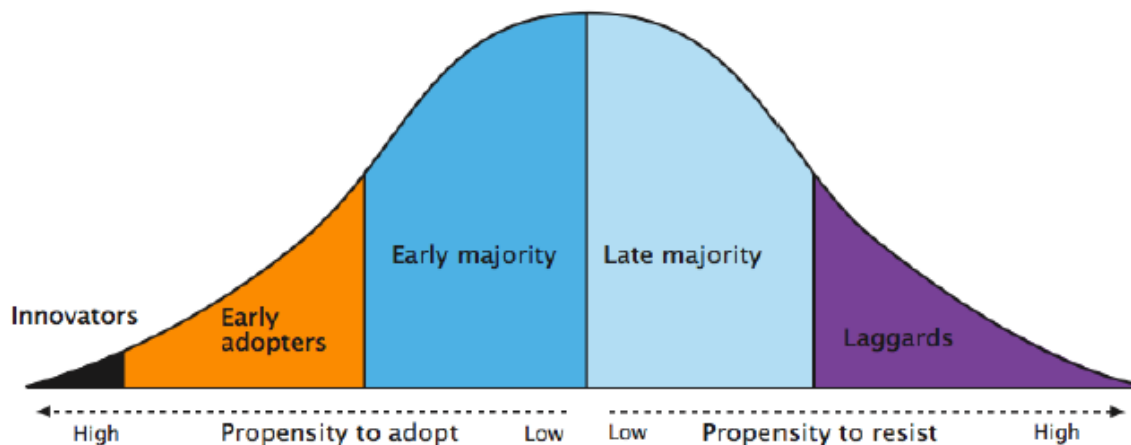
b) The importance of peer-peer conversations and peer networks The second important insight is that impersonal marketing methods like advertising and media stories may spread

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information about new innovations, but it's conversations that spread adoption. Why? Because the adoption of new products or behaviours involves the management of risk and uncertainty.

It's usually only people we personally know and trust – and who we know have successfully adopted the innovation themselves – who can give us credible reassurances that our attempts to change won't result in embarrassment, humiliation, financial loss or wasted time. Early adopters are the exception to this rule. They are on the lookout for advantages and tend to see the risks as low because they are financially more secure, more personally confident, and better informed about the particular product or behaviour. Often they will grasp at innovations on the basis of no more than a well worded news article. The rest of the population, however, see higher risks in change, and therefore require assurance from trusted peers that an innovation is do-able and provides genuine benefits.

As an innovation spreads from early adopters to majority audiences, face-to-face communication therefore essential to the decision to adopt. This principle is embodied in the Bass Forecasting Model (below), which face-to-face communication becomes more influential over time, and mass media less influential.



Source: Mahajan, Muller and Bass (1990) as reproduced in Rogers, E.M.(2003) p210.

The emphasis on peer-peer communication has led diffusion scholars to be interested in **peer networks**. Many diffusion-style campaigns now consciously attempt to utilise peer networks, for instance by using Popular Opinion Leader techniques or various —viral marketing‡ methods. These methods – which are becoming increasingly popular – aim to recruit well-connected individuals to spread new ideas through their own social networks.