

GAINING MOMENTUM

Managing the Diffusion of Innovations

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Managing the Diffusion of Innovations

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Preface

Diffusion, or the widespread adoption, of innovations is critical, but underresearched and ill-understood. It is the means by which innovations — technological, commercial and organizational — are translated into social and economic benefits. Existing treatments of this important, but neglected, topic tend to adopt a single discipline to try to explain the phenomenon, typically economics, sociology or marketing. However, the diffusion of innovations is inherently multidisciplinary, and this book adopts a managerial, process approach to understanding and promoting the adoption of innovations, based upon the latest research and practice.

The title *Gaining Momentum* was chosen to reflect an important omission in most treatments of diffusion. The term “momentum” is often used simply to indicate some critical mass of adoption or threshold level, or a successful marketing or communication campaign. Most studies are concerned only with the rate of adoption or the final proportion of a population that adopts an innovation. However, diffusion, like momentum, should be treated as a vector in that it has both magnitude and *direction*. The direction of the diffusion of innovations needs more attention: how and why different types of innovations are adopted (or not). This is critical for innovations which have profound social and economic implications, such as those affecting development, health and the environment.

Most innovation research, management and policy focus on the *generation* of innovations, especially new product development. However, a better understanding of why and how innovations are

adopted (or not) can help us to develop more realistic management and business plans and public policies. There is a wide chasm between the development and successful adoption of an innovation, and around half of all innovations never reach the intended markets. Conventional marketing approaches are fine for many products and services, but not for innovations. Marketing texts often refer to “early adopters” and “majority adopters”, and even go so far as to apply numerical estimates of these, but these simple categories are based on the very early studies of the state-sponsored diffusion of hybrid-seed varieties in farming communities, and are far from universally applicable. To better plan for innovations, we need a deeper understanding of what factors promote and constrain adoption, and how these influence the rate and level of diffusion within different markets and populations.

There are many barriers to the widespread adoption of innovations, including:

- Economic — personal costs versus social benefits, access to information, insufficient incentives;
- Behavioral — priorities, motivations, rationality, inertia, propensity for change or risk;
- Organizational — goals, routines, power and influence, culture and stakeholders; and
- Structural — infrastructure, sunk costs, governance.

The literature on diffusion is vast and highly fragmented. However, a number of different approaches to diffusion research can be identified, each focusing on particular aspects of diffusion and adopting different methodologies. The main contributions have been from economics, marketing, sociology and anthropology. Economists have developed a number of econometric models of the diffusion of new products and processes in an effort to explain past behavior and to predict future trends. Prediction is a common theme of the marketing literature. Marketing studies have adopted a wide range of different research instruments to examine buyer behavior, but most

recent research has focused on social and psychological factors. Developmental economics and rural sociology have both examined the adoption of agricultural innovations, using statistical analysis of secondary data and collection of primary data from surveys. Much of the anthropological research has been based on case studies of the diffusion of new ideas in tribes, villages or communities. Most recently, there has been a growing number of multi-disciplinary studies which have examined the diffusion of educational, medical and other policy innovations.

This book is organized in three parts. The first part examines the generic factors which influence the diffusion of innovations, from concept through development, trials and commercialization. Chapter 1 presents a review of the major models of diffusion and highlights some key issues in the management of diffusion. In Chapter 2, J. Roland Ortt identifies the critical role of “pre-diffusion” phases in the subsequent success or failure of diffusion. Federico Frattini in Chapter 3 identifies the pre-development factors which contribute to market and network acceptance. In Chapter 4, Susan Hart and Nikolaos Tzokas review how launch strategies affect market adoption; and in Chapter 5, John Christiansen *et al.* argue that, in many cases, it is necessary to co-develop a new product and the associated brand. Qing Wang reviews the evidence on how consumers respond to innovations in Chapter 6. The influence of market and technical standards on the adoption of innovations is examined by Davide Chiaroni and Vittorio Chiesa in Chapter 7. In Part II, we look at the sector-specific dynamics of diffusion. Chapter 8 reviews the experience of pharmaceutical innovation in health care systems; Chapter 9, mobile telecommunications; and Chapter 10, environmental products and services. Each of these three cases demonstrates the importance of generic factors such as network effects and regulatory context, but also exhibits strong contingency influences due to the unique national and sectoral systems of innovation. Finally, in Part III we apply our understanding of diffusion to help predict and forecast future patterns of adoption. Chapter 11 reviews methods of forecasting, and Chapter 12 surveys the evidence and support for different models of forecasting diffusion.

We hope that this book will encourage others to re-examine research, policy and management practice on the diffusion of innovations in order to help translate innovations into social and economic benefits.

Joe Tidd

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April 2009

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