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## **Editorial: Emerging Technology Transfer Evaluation Techniques**

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Over thirty years ago, Charpie (1970) wrote that in industrial economies, studies show that 30 to 50 percent of long-term economic growth stems from innovations that either improve productivity or lead to new products, processes, or completely new industries. In the U.S., recent examples include hardware and software industries and so-called dot com companies related to information technology. Market values of stocks of some of these new corporations that have existed for only a few years far exceed those of some much older and established industries. Ostensibly, the commercialization of information technology has made a major impact on efficiency and productivity, which in turn has resulted in the high market valuation of stocks in these companies.

The economic role commercialization of research and development plays in the US economic well being is further documented in the National Science and Technology Council (1999) report. This states that research and development and its commercialization have enabled approximately half of the US productivity and growth in the last fifty years. Even though economists, scientists, engineers and policy-makers have long identified technology as a key input to increased productivity and wealth creation, it is generally believed that incentives and policies for the utilization of new technology have been lagging; consequently, slowing the socially beneficial utilization of technical capacity in countries like the United States. Branscomb (1993) has suggested that the United States must shift its strategies from those centred on government to strategies centred on industry. This needs to be done in a way that balances government investments in science and basic research, i.e. creation of new knowledge, with a new focus on promoting its utilization by industry.

A new technology has to have considerable *relative advantage* and has to provide significant value to the customer before it is embraced by the wide user community (Jain and Triandis, 1997). Even when a new technology provides a considerable advantage and value to the customer its adoption and wide scale utilization can take many years. Many new ideas and knowledge related to addressing this complex issue of moving technology from lab to the market are being developed. There is, however, significant lag time between the generation of these ideas and their dissemination via normal publication processes. Consequently, a focused seminar/conference that brought together nationally and internationally recognized experts in the field was held in July of 2001 in Hawaii, USA. Some of the papers from this conference were selected for publication in this focused issue of the journal. These papers were subjected to the normal peer and editorial review process. It is hoped that this special issue provides a mechanism for disseminating information on a timely basis, which will be useful for technology transfer and effective technology management.

The unifying theme of this issue concerns emerging environmental technology evaluation techniques and challenges related to commercialization. Furthermore, it focuses on utilizing new approaches such as e-commerce and other related information technology tools. For example, Singh discusses the theoretical role that social networks play in improving the technology transfer process. Jain *et al.* discuss the development of a comprehensive technology transfer evaluation methodology. Wagner Weick *et al.* discuss how the transfer from the laboratory to the marketplace of genetic-engineering

technologies has been retarded by public perceptions of possible negative environmental and health repercussions of genetically engineered crops and food, and how the Internet can have an effect on these views. The conclusions from all of these works support our belief that technology transfer is more than a 'contact sport,' as is currently commonly espoused. It is best facilitated through working partnerships, sometimes two-way, sometimes multi-sided, through which all participants gain benefits, whether they are economic, social or mission-oriented.

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