Editorial: Technology transfer

Ravi K. Jain

Over 30 years ago, Charpie [1] wrote that in industrial economies, studies show that 30 to 50% of long term economic growth stems from innovations that either improve productivity or lead to new products, processes, or completely new industries. In the USA, 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 are in existence for only a few years far exceed those of some much older and established industries. Ostensibly, the commercialisation 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 commercialisation of research and development plays in US economic wellbeing is further documented in the National Science and Technology Council [2] report that states that research and development and its commercialisation has enabled approximately half of the US productivity and growth in the last 50 years. Even though economists, scientists, engineers and policy makers have long identified technology as a key input to increased productivity and creation of wealth, it is generally believed that incentives and policies for the utilisation of new technology have been lagging; consequently, slowing the socially beneficial utilisation of technical capacity in countries like the USA. Branscomb [3] has suggested that the USA 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 utilisation 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 wider user community [4]. Even when a new technology provides a considerable advantage and value to the customer, its adoption and wide-scale utilisation 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 recognised experts in the field was held in August 2000 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 on a timely basis information that would be useful for technology transfer and effective technology management.

We are grateful to the authors who contributed papers to this special issue and the conference sponsors whose support made this special issue possible. Assistance provided by Mr. Larry Fradkin (US Environmental Protection Agency), Julie Chambliss (UTRS, Inc.), Dorry Tooker (Federal Laboratory Consortium for Technology Transfer) and Melinda Harris (graduate student, editorial assistant, University of Cincinnati) is gratefully acknowledged.

References

1 Charpie, R.A. (1970) 'Technological innovation and the international economy', in M. Goldsmith (Ed.), *Technological Innovation and the Economy*, Wiley-Interscience, London, pp.1–10.

2 National Science and Technology Council (NSTC) (1999) 'Renewing the Federal Government-University Research Partnership for the 21st century', *NSTC Presidential Review Directive – 4)*, Executive Office of the President, Office of Science and Technology Policy, April.

3 Branscomb, L. (1993) 'Empowering technology policy', in L. Branscomb (Ed.) *Empowering Technology*, The MIT Press, Cambridge, MA, pp.266–294.

4 Jain, R.K. and Triandis, H. (1997) *Management of Research and Development Organizations: Managing the Unmanageable*, 2nd edition, John Wiley & Sons, Inc. New York, NY.