Editorial

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Moving technology from the lab to the market can have many benefits: improving organisation effectiveness; reducing costs; achieving other economic and social goals, for example enhancing environmental quality.

A new technology, however, has to have considerable *relative advantage* and has to provide *significant value* to the customer before it is embraced by the wider user community. The new technology initially can be more expensive than the older technology, but the value in terms of quality, flexibility, long-term cost effectiveness and responsiveness it provides motivates the user to take the necessary steps in adopting this technology (Jain and Triandis, 1997).

In utilising a new technology, there are numerous management challenges. Continuous improvement is the basis of future competitive advantage for a company or a firm. It may be useful for a manager to know some general considerations that will provide a context for moving technology from lab to the market (Howard and Guile, 1992):

- Do not accept performance as it is and focus on continual improvement.
- Try not to do just the same thing a bit faster or cheaper or automatically; instead careful examination of product and process designs is essential to make significant improvements.
- Recognise and learn to deal with people's natural reluctance to accept change that is often necessary to incorporate innovation in the firm.

The unifying theme of this special issue encompasses 'Technology transfer as related to economic and environmental issues'. Papers focus on providing generalised frameworks, role of universities, managing knowledge and examples of technology transfer related to economic and environmental issues.

Stone *et al*., in the paper entitled 'Picking winners: a framework for evaluating success potential of technology commercialisation' present a framework that enables systematic evaluation of the potential for market success for a given technology and company. This framework was used as a vehicle to interpret lessons learned from the commercialisation of technology from the US Environmental Protection Agency to the private sector companies. Munroe *et al*., in their paper describe economic development via university based technology transfer, especially for the smaller and lesser known universities. They identify how smaller universities can also stimulate local economic development through this process; presented also are a number of critical factors for the success of such endeavors.

Premus and Jain in their paper entitled 'Technology transfer and regional economic growth' explore the potential of technology transfer policy as a stimulus to regional economic development. The paper provides information related to the university research activities and resulting productivity growth rates in national and regional economies. Described are problems and barriers encountered in managing the transfer of government

funded and university conducted technology across organisational boundaries. Presented also are endogenous growth theory and knowledge spillovers, regional technology transfer issues and technology transfer process; included in the paper also are related case studies. Chambers in his paper discusses predicting technology transfer from data in research on technology development. Chambers describes how characteristics of the adopter and the situation to which the technology is transferred and interactions between these factors and the technology affect the outcomes. Presented in the paper is a statistical procedure that can be used with R&D projects to estimate variance associated with different factors that might influence the technology transfer process.

Doherty *et al*., describe issues related to managing knowledge and data to support technology transfer. The ability to identify and communicate with various types of domain experts is critical to overcoming the many barriers in the process of technology transfer. This paper describes a specific project whereby the environmental expertise knowledge-based system, a distributed software system, was developed to assist in the identification of individuals with expertise in specific areas of environmental engineering and science. This application takes knowledge that is commonly tacit and inadequately maintained and makes it both explicit and accessible. Kim *et al*., describe 'Wind power technology development, transfer and commercialisation related to construction of a wind turbine test site in Korea'. The paper provides the current status of wind power generation industry in Korea and the renewable wind energy policies of the government there. Discussed are issues related to: adaptability of the wind turbines under mountain environments of Korea, systems stability, compatibility and technical and administrative challenges.

Desai *et al*., describe the need and the means to adopt better environmental technologies. The paper highlights the need to address environmental deterioration and presents a variety of means to prevent it by adopting emerging technologies. Roper in his paper entitled 'Geospatial informatics application for assessment of pipeline safety and security' describes a variety of advanced technologies to enhance planning, designing, managing, operating and maintaining the components of the electric utility system. Industrial and scientific advances in airborne and satellite remote sensing systems and data processing techniques are opening new technological opportunities to develop and increase capability for safety needs of industry; these technologies have significant and unique potential for application to a number of energy systems security issues. Presented in the paper are examples of applications of these technologies to pipeline and power industry infrastructure, economics and relative effectiveness of these technologies and issues related to technology implementation and diffusion.

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