Editorial

Sören Eriksson

Jönköping International Business School,
Box 1026, SE-551 11, Jönköping, Sweden
E-mail: soren.eriksson@ihh.hj.se

This special edition of the journal deals with globalisation and technology transfer in the aerospace industry. This industry encompasses several industries that produce aircraft, space vehicles, engines and a variety of components and systems. The requirements of technology necessitate a high level of R&D and this industry has a considerable potential for spill-over to other sectors. The industry has largely been dominated by the advanced industrial economies in North America, Europe and a few other countries. In recent years, we have seen a dramatic change in the organisation and structure of this industry, such as consolidation, which implies fewer system integrators, increased global production networks, i.e., international subcontracting and cross-border ownership. Several newly industrialising economies (NIEs) have invested heavily in this industry, one current example is China.

Globalisation is a frequently used word, which is invoked by academics, business, politicians and the general citizen. From an economic and technological aspect, globalisation means an increased global spread of economic and technology activities of which industrial manufacturing is an important part. It is not merely an extensive geographical spread of such activities across national boundaries, but a high degree of functional integration, exemplifying the increased importance of innovation processes, knowledge exchange and supply chains in the industry.

Over the last few decades, the profound changes in the world economy have heightened interest in the spatial economy, and the topic of geographical proximity and geographical clustering is an important issue when discussing the relationship between the local and the global. The basis of localised knowledge clusters lies in several characteristics of the innovation process that are sensitive to geographical distance and proximity. The aerospace industry with its international character implies an increased importance of international supply and value chains as vehicles for transfer of knowledge and technologies between various clusters. With the increasing globalisation of the aerospace industry, this high technology sector has become an important source of technology transfer.

Technology transfer can be defined in a number of ways, but it is related to the process of sharing skills, knowledge, technologies and methods of manufacturing among firms, governments and institutions. Not all technological knowledge comes in the same form, just as it does not come from a single source.

Technology is embodied in machinery and equipment, but without documentation and manuals that 'codify' it this knowledge may be out of reach of customers or users. The fundamental knowledge remains in the heads of technical and research personnel of the manufacturer. The knowledge, which they retain, is tacit or 'fingertip' knowledge, as opposed to codified knowledge. Tacit knowledge flows primarily through informal

networks, and these networks allow a firm to scan and monitor both internal and external sources of knowledge.

International technology transfer is the most common means of narrowing the gap between global best practice and local technology. International corporations transfer technology internationally usually to local enterprises in various parts of the world, either bundled or unbundled. The latter refers to the separation of various elements of a technology, such as R&D, construction, manufacturing, marketing, training and co-production. In essence, management skills are needed to weld these elements of knowledge into a viable productive effort.

The organisation of knowledge-based systems is far more complicated than the linear model. A long line of research, both in advanced high-tech environments and from technology transfer, has focused on the need for technical competence in both the provider and the recipient. If firms are learning organisations, then they must be able to learn from many sources.

The papers in this special issue of *IJTTC* have different approaches both in the context of relation to the aerospace industry, globalisation and technology transfer and the research methods used.

The paper 'Does geographical proximity enhance knowledge exchange? The case of the aerospace industrial cluster of Centre Italy' offers evidence for the assumption that geographical proximity matters for inter-firm innovation-related knowledge exchange. The study provides insights into the relevance of spatial proximity for transferring different types of knowledge.

'China's aircraft industry: collaboration and technology transfer – the case of Airbus' focuses on the emerging China, which has developed a deliberate strategy in order to become a future player in this politically influenced high technology industry. The paper analyses what measures have been taken by Airbus in the form of technology transfer and other measures to strengthen its position on the Chinese market. The transfer process is based on a 'win-win' concept, where technology and knowledge goes in one direction and the order for airliners goes in the other.

The paper 'The determinants of technology transfer through networks: an empirical study on the aerospace industry' examines the factors affecting technology transfer through international R&D consortia. The study suggests that strong ties and firm similarities are positively related with a greater chance of a successful technology transfer.

'New entrants and overcapacity: lessons from regional aircraft manufacturing' takes a different approach. The focus is on the global regional aircraft industry and compares demand with available production capacity. Different propositions are put forward to explain the behaviour of new entrants. Although not directly focusing on technology transfer, the paper is important as it discusses the demand side of an industry and the prospects of new entrants, and thus indirectly affects technology policy issues in this industry.

I wish to thank all those who contributed to this special edition and hope that the journal will stimulate readers to take an increased interest in the aerospace sector and issues related to this industry.