## **Editorial**

## Commodification and De-Commodification of Knowledge

Modern complex societies are characterized as knowledge societies. Professional expertise and knowledge-based technology are needed to further develop these societies. New modes of knowledge production have evolved and the products are different from traditional knowledge. Scientific and technological knowledge have become significant productive forces of modern societies – even more important than capital and labour, as is argued by Luis Suarez-Villa in the introductory article of this Science Studies issue.

Knowledge producers appear to have an increasing interest in the commercial viability of knowledge. Their products can become an important source of revenue. For this purpose knowledge must assume the properties of a private commodity. It must be "commodified" to use a term originally developed in the Marxist tradition in which it was to depict the transformation process in the capitalist production regime of human labour into a tradeable commodity. Commodification of knowledge requires transforming tacit into explicit, unstandardised into standardised, uncodified into codified knowledge and shifting emphasis from its use value to its exchange value. At the same time this type of knowledge needs special protection such as patents and other intellectual property rights to prevent unauthorised use and assure individual appropriation of its exchange value.

The process of commodification of knowledge and its various facets were discussed in a stream of sessions of the Research Network "Sociology of Science and Technology" (SSTNET) at the fifth conference of the European Sociological Association (ESA) in Helsinki (August 28 – September 1, 2001). The collection of papers included in this issue originates from these sessions. The articles have benefited considerably both from the discussions in Helsinki and from the comments of the referees of Science Studies to whom we are indebted.

The articles' central concern is not with the long-term implications of commodification for the traditional mode of knowledge generation in science and technology. Rather, they focus on the commodification process which appears to be contentious and not necessarily uni-directional. On this background Luis Suarez-Villa's proposition that commodification of knowledge is the dominant if not constitutive trend of contemporary technocapitalism sounds pro-

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vocative. But the picture he offers convincingly indicates that the societal changes of the last century have promoted commodification.

Counter movements towards commodification can also be observed, however. Michael Nentwich provides a challenging example. He argues that academic knowledge distribution, which was characterised by increasing commodification through commercial publishers is entering an era of decommodification. This is facilitated by the new electronic media which can be used to distribute knowledge freely and at low costs. Also Ursula Holtgrewe's and Raymund Werle's article on Open Source software shows that despite successful attempts of the software industry to gain intellectual property protection of their products the public good tradition of software development has recovered. Sustained by the spirit of a social movement and based on global cooperation via the Internet, Open Source represents a process of decommodification of knowledge which partly complements and partly replaces commercial software development.

More often than not the tension between commodification and decommodification brings about a conflict of institutions as in the case of voluntary technical standardisation. Analysing the development of standards for mobile telephony Eric Iversen highlights the contentious interaction between patents and standards. Patents and standards codify technological knowledge. While patents primarily serve to protect intellectual property, committee-based standards are akin to public goods. Standards of complex technological systems unavoidably require to include patented knowledge which then infringes either the private or the public good.

Decreasing public allocations to universities combined with external "relevance pressure" has contributed to the rise of the phenomenon of Mode 2 knowledge production. This mode arguably advances commodification of knowledge to the extent that it is detached from the traditional university context. Merle Jacob shows in her contribution that the institutional obduracy of higher education materialises as a management problem in two organisations which have developed new institutional formats. The transition to Mode 2 obviously requires more than political programmes pushing towards knowledge exchange between university and industry.

## Raymund Werle