
Editorial

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Biographical notes: Marina Dabic is a Full Professor of Entrepreneurship and International Business at the Faculty of Economics and Business, University of Zagreb, Croatia and Senior Fellow of the Pino Global Entrepreneurship Center, Florida International University, USA. She published more than 100 papers in international journals including: *Journal of International Business Studies*, *Journal of World Business*, *European Management Journal*, *Thunderbird Business Review*, *Management Decision*, *Journal of Manpower* etc. She is the Editor of the *International Journal of Innovation Systems*, Inderscience. She participated in more than 60 conferences all around world. She has been the grant holder of several EU Projects: Tempus, Erasmus, Leonardo. In 2004, she was the Visiting Professor at Strathclyde University, Scotland sponsored by EU. She is a grant holder of EU JP TEMPUS Project: Fostering Entrepreneurships in Higher Education – FoSentHE.

“Every mind was made for growth, for knowledge; and its nature is sinned against when it is drowned in ignorance.”

William W. Channing

Technology is becoming the most significant factor of economic, societal, cultural and civilisational development. It influences the relationships among people, economic entities and states. Technology has accompanied man since the ancient times with the single basic task: to make life easier. Life without technology is inconceivable. This was clear to J. Beckmann as early as in 1777 when he stated that “technology is a comprehensive science on interlockedness of technics, economics and society”¹.

Technology as a limited and stringently defined phenomenon for centuries followed the trodden paths where it emerged, spread, traded, thrived or failed. Technological innovation has offered a new approach to the technology market facilitating the distribution or reception of larger multitudes of data than ever before.

Technology is a civilisational phenomenon – constantly modifying, changing itself and the very human being. Its civilisational achievement lies in the very bonding between the material processing methods and the contemporary social structures and human values from the past and the present with a view to the future. Thus, technology leaves its marks on the system of values, culture, organisation, economics, professions, the manufacturing methods and the shapes of human life. Although the market is still (for the time being) dominated by technologies generated (invented) in the developed countries there is a rising awareness of the need for creating technologies and knowledge on a human scale, which requires using and pursuing new technologies both in the developed and in developing and transition countries.

Technology and innovation, as significant segment, make sense only if they contribute to the quality of life as an inclination beyond, before and above the materialistic glorification of reality as well as if their primary aim is to be as available as possible. Thus, new technologies reduce the limiting factors (space, time resources and capital – making their availability more acceptable and diversified. The very (technological) changes occurring presently alter the relationships among the actors in any correlation with the technology: owners, manufacturers, distributors, or users – thus conditioning different cooperation and correlations.

Technology has produced the world economy which is often referred to as ‘the global village’. New achievements in communication technology or microelectronics facilitate the control over international markets, which accelerates organisational growth and improves the opportunities for a greater inclusion into the international market.

More and more significance is attached nowadays to the apparent interactive technologies, technological trajectories, new technological systems² or generic technologies. These notions explicate the application of the concept of economic and technologically interlocked group innovations. Informatics and other generic technologies generate transectoral effects, thus changing a country’s socio-economic image.

Technology has also become the primary feature of the organisational culture as it has increasingly been the determining factor in an organisation’s culture, which is visible from the very manner it is presented and communicated in an organisation. Today many firms – especially the high-technology firms – emphasise their attitude towards technology as their fundamental feature and the way they implement it.

The Greek philosopher Aristotle taught of the repugnance which nature exhibits towards a vacuum (*horror vacui*). This opinion was seconded by the American economist Thurow (1993) in his study on the new economic confrontations in international relations saying that “the economy fears vacuum just as the Mother nature” and that “with economic competition between communism and capitalism over, this other competition – between two other forms of capitalism – has quickly taken over the economic field”.

Establishing quality public relations implies adjustment to the environment alongside respect and an exceptionally huge number of permanent programmes – both traditional and new – and facilitates changes in the environment and in all partakers in subsistence and creation of new innovations and technologies. Yet investment in R&D, the widely recognised driving force of innovation, remains highly clustered. “The United States is in the lead with close to *a third* of the world’s total investment of the world’s total investment followed by the European Union (25%), Japan, (13%) and China (9%). All other countries worldwide combined account for only 18% of R&D expenditure” (Bolay et al., 2012).

The role of academic and other R&D institutions is to make the required type of manpower available on a continuous basis is well understood: the imperative sources of supply ensure that industrial capability and competencies can be sustained enduringly. This includes the knowledge industries that are essential for successful technology transfer in many cases. Benoit Godin and Joseph P. Lane in their positioning paper ‘A century of talks on research: what happened to development and production?’ discussed the role of research during the last century.

Timely and effective technology transfer is considered to be critical for retaining a competitive position in today’s business environment. This is primarily due to the

increased availability and diffusion of new technologies into products and processes. Countries and organisations, therefore, are concerned with acquisition, incorporation and successful assimilation of technology into their systems. This important topic is discussed by José Carlos Rodríguez and Mario Gómez in the paper: ‘Anchor tenants, technology transfer and regional innovation systems in emerging economies: a system dynamics approach’.

The above discussions clearly indicate that external agencies play a vital role in successful technology transfers. These agencies include various entities such as governments, research institutions (public or private), academia, suppliers and partners, as well as customers and distributors. Societal conditions are important in this context and without a good support system effective technology transfer is very hard, if not impossible at times.

The new spirit requires new attire, new world division and different social relations whose basic universal determinant is their general intertwining. We all are and all is part of a single indivisible body and we are becoming more and more aware of that. The regional grouping initiatives emerge as an opposite process streaming to create more and more solid ties in the region and to strengthen the negotiating positions of a group of countries in the world markets.

‘Regional balance of technology transfer and innovation in transitional economy: empirical evidence from Russia’ is explained in the paper written by Dirk Meissner and Stanislav Zaichenko.

The manufacturing industry is linked to and dependent on science. Science has made the industrial development possible – and, in reverse, industrialisation has accelerated the development of science. The results evident in economy and in life are robust. The idea of research is traditionally associated with new knowledge while development is identified with knowledge application by scientists and engineers. These two separate processes make up the whole. However, there is a prevalent lack of bondage that would link the particular segments of knowledge engaged to develop products or processes. That link should be epitomised in applied research.

The relationship between scientific research and technology is not linear. Scientific research determines technology via a process that flows from fundamental research, applied research, technology development and application to innovation and need. Thus, João Guerreiro and Hugo Pinto in ‘The engaged university and institutional changes in Portuguese innovation systems’ discussed the changes in Portuguese innovation systems with the aim to increase national competitiveness and apportion capacities.

Societies, their markets and other practices are changing at different degrees of speed and so do humans creating value in them. Innovation is considered to be the crucial vehicle for improving the competitive performance. The last paper in the issue entitled ‘The influence of knowledge-based innovation on entrepreneurial outcomes’ and written by Aleksandra Gawel empirically examines innovative practices in Polish firms.

By these reflections on innovation and technology as well as on their survival in the future and life modifications I would just like to emphasise that all technological advances change the traditional outlook on innovation and technology which implies that their contents must be in-built in order to be disseminated and that an electronic network may only serve to promote technology in its physical form and to act as a distribution channel towards the end user.

I hope that selection of the papers in this issue will provide a starting point for further discussion and stimulate the debate on the value of technology transfer and R&D investments in economies around the world.

References

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Notes

- 1 *Germ.* Technologie ist eine uebergreifende, Wirtschaft, Gesellschaft und Technik verklammernde Wissenschaft. In 1796, Johann Beckmann defined technology as "a comprehensive description of knowledge of manufacturing in most diverse artesinally useful crafts" ("Technologie ist eine zusammenfassende Beschreibung des Wissen der Herstellverfahren in den verschiedenen Gewerben, den nuetzlichen Kuensten"), Izvor: Čatić, I. (2010) *Strojarstvo*, Vol. 52, Nos. 3, pp.260–326.
- 2 OECD (1980) *Technical Change and Economic policy, Science and Technology in New Economic and Social Context*, Paris, str. 65.