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Guest editorial

Innovation and entrepreneurship. Contexts, strategies, and transformations.

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1. Socio-economic and organizational change and systems of innovation

There is widespread agreement that the processes of globalization and the socio-economic transformations towards knowledge societies have changed the environment not only of single firms, but also of entire national economies. Price and cost competition are intensifying as national monopolies begin to erode, and at the same time new competition criteria have been established, such as quality

time, and innovation. Industrial innovation in particular is becoming a pivotal competition factor and some scholars speak about the emerging of an innovation-mediated economy (Florida and Kenney 1993). Growing innovation competition implies that companies have to focus more on knowledge creation, diffusion and application and that a far greater proportion of the production process than heretofore must be accounted for by knowledge intensive services and a smaller proportion by the material 'labor process' (Lash 2004).

In Western economies traditional production structures have become obsolete due to the changing rules of competition. The so-called Fordist production model was designed to serve long-term stable demand for mass production, but it has become inefficient in a rapidly changing market where innovation and product differentiation are key success factors. Therefore, companies have to undergo structural changes in their production model in order to make them more flexible and adaptive. Such structural changes must be accompanied by cultural changes; only if innovation oriented thinking is spreading through the whole organization firms will be able to make effective use of flexible and decentralized organizational structures.

But organizational change is only one aspect of a strategy to increase competitiveness. To be innovative in producing new products companies increasingly depend on the exchange of information, knowledge and expertise with customers, suppliers, and support organizations and institutions. Successful innovation-mediated economies increasingly depend on well-functioning innovation networks. In such a network structure, scientific and technological spin-offs are becoming one of the primary linkages between scientific knowledge and innovation processes, between university and industry. Spin-offs can become a transmitter of firms' transformations, but also an incentive for universities to establish new relationships with their wider social and economic environment. Notions like "academic capitalism" (Cobalti 2006), "entrepreneurial university" (Clark 1998) or "education industry" (Pawlowski 2004) emphasize this changing role of higher education and, at the same time, establish new standards for assessing university's performance (Zich 2006).

This connection between knowledge production, innovation processes, and firms' performance levels suggests that the latter are undoubtedly connected with the institutional environment, in which they are embedded. Concepts like "national systems of innovation" aim at capturing the systemic, interdependent character of innovation. Accordingly, understanding technological change and innovati should be explored within "the social fabric in which the innovative activities a actually developed and used" (Archibugi and Michie 1997: 122). Research innovation systems has pointed to the aspect of path dependency. The strength the path dependency perspective is that it does not separate technologic innovations from past developments, but assumes some kind of continuity in t process of technological change. Innovations line up with earlier technologic change within an economy; they have historical antecedents of novelty. In th respect we can speak of the path dependency of technological development (Dav 1985).

Technological paths, as Granovetter (1997) argues, are embedded in a particul organizational, institutional and cultural setting, providing some kind of stability economic development. But path dependency always carries the risk of turnin into so-called lock-in (Schienstock 2009). The economy of a country can be locke into an inferior option of techno-economic development if it does not adapt t major environmental changes and does not aim at exploiting new opportunitie this may in the long run result in a loss of competitiveness and the retarding economic growth. This suggests that in a period of fundamental transformatio towards an innovation mediated and knowledge-based economy countries have t search for a new growth path; more attention has to be given to the problem unlocking and path creation (Garud and Karnoe 2000, Schienstock 2009).

2. Transformations in entrepreneurship: the case of the post-socialist space countries

A comparison of Western countries shows that only few of them have managed t come out of the period of transformation, which is of course still continuing, a winners, while many of them have fallen behind and have lost ground in globa innovation and knowledge competition. Furthermore, while the cumulative nature of knowledge development narrows down the range of potential directions o change national trajectories increase differentiation and diversifications a offshoots from the main development path towards a knowledge-based economy (OECD 1992). This suggests that we cannot assume convergence in the development of national economies; instead we can expect varieties of economic development.

Of course the challenges former socialist countries face in the process of developing into a knowledge society are much higher. Their economies had and still have to manage multiple transition processes at the same time. Therefore, studying the post socialist space offers a unique opportunity to explore the inseparable connection of the innovation process at the level of enterprises with the wider systemic transformation.

The basic processes of transformation from a centrally planned to a market economy and from a closed into an open, globally competitive economy do not yet cover the whole picture. Catching up to developments in the global economy also implies the need to pursue flexible and innovative production models on the firm level emphasizing knowledge creation and utilization over simple resource exploitation (Kabalina 2007). Furthermore the development of a dynamic services sector, particularly knowledge intensive business services is of much importance, as the latter can be characterized as a motor of an emerging knowledge-based economy. And last but not least creating a new institutional system, including a stable political and legal environment, and developing the civil society has been a major challenge.

Of course country specific factors as well as the character of the transformation process itself have shaped each country's path from socialism. Countries which have started economic reforms already during the socialist period seem to be more successful than those that had to start the transformation from a break-down of the political system (Schienstock and Traxler 1997). And early integration into the European Union has also given countries a major advantage over those countries which are still outside of the EU.

Schienstock (2009) has argued that besides new technological opportunities, new emerging markets, social and economic pressures and major change events, a successful creation on a new growth path depends on the engagement of a number of social pioneers. Among them scientists, familiar with the latest status quo in their scientific field, entrepreneurs, familiar with newest management practices and organizational models and prepared to take high risks, as well as politicians, capable in initiating and conducting anticipatory institutional change, have a crucial role to play in the transformation process.

3. Innovation and entrepreneurship: a reassessment

The articles of the publication concentrate on these human resources in former socialist countries and beyond. They examine the complex nexus of firms' innovative performance and the institutional environment with exemplary references and case studies from Belarus, Bulgaria, Estonia, Finland, and Hungary.

The articles of this special issue of *Research in Social Change* explore two major foci of attention. On the one hand, innovation processes in organizations and networks are seen as the result of the interplay of formal and informal dimensions, including social norms, individual motivations and expectations, tacit and explicit social knowledge. On the other hand, the importance of the entrepreneur as the motor of innovation in firms and research organisations is reassessed and subjective and institutional factors influencing entrepreneurial commitment and performance are discussed.

Three of the papers in this special issue were presented at the workshop *Cooperation and participation in technoscience in the Socialist and the Post-Socialist space* (Graz, Austria, May 4 and 5, 2009)[1]. A fourth paper was developed in the framework of the *IAREG – Intangible Assets and Regional Economic Growth* research project[2].

In the first article, Ivan Tchalakov examines the institutional environment of entrepreneurship and innovation in the socialist regimes. The Author proposes a new approach to the study of the role of entrepreneurs in the socialist economic system by combining three important research traditions: Schumpeter's theory of "non-market economy", the techno-economic networks (TEN) approach to innovations in late capitalism developed in Science and Technology Studies, and the historical sociology of socialism. This renewed framework allows the author to interpret the specific innovation regime in socialist economies as a dynamic interplay between the process of expansion of world-wide socio-technical networks of industrial production and indigenous conflicts and negotiations between different wings of the communist nomenklatura, who governed an encompassing administrative coordination. Tchalakov sheds light on the emergence, and decline, of the socialist entrepreneur and the role of communist nomenklatura in exercising entrepreneurial functions.

After this historical introduction, two articles explore the current role of spin-off firms in promoting technological innovation in Central and Eastern Europe.

Anna Pobol examines the role of the subcontracting relations that emerge in the innovation process as a channel for diffusion of tacit knowledge and intangible assets. On the basis of the analysis of various types of subcontracting linkages around research-based spin-off (RSO) firms and their economic effects, the article demonstrates the importance of non-market interactions, including tacit knowledge and reputation naturalization, in organizing RSOs' subcontracting relations. A qualitative analysis of case studies of RSOs in Belarus and Estonia is presented to support these claims.

Katalin Erdős investigates the factors promoting RSO creation. Her research note refers to prominent interpretive frameworks of spin-off creation to examine the complex system of academic motivations that can give an incentive for faculty members to become entrepreneurs, and the individual, university, regional and national level factors that influence the realization of these motivations. Based on a survey of Hungarian biotechnology companies, the article develops a typology of academic entrepreneurs.

In the last paper, Gerd Schienstock offers an overview of organizational factors promoting the diffusion on innovation in firms. By presenting the results of a survey of Finnish firms, the article offers also an interesting international benchmark for the previous analyses that focused on cases in Central and Eastern Europe. Schienstock researches the diffusion of innovative practices in Finnish companies and assesses the impact of organizational restructuring on companies' performance. In his analysis, he distinguishes formal and informal innovation strategies and relates each of them to the environment of innovations, which can be either new to the market or new to the firms themselves.

These papers demonstrate a wide variety of insights to understanding innovation processes in firms. In spite of the awareness of the importance of companies' innovative performance in economic growth, research on this domain in post-socialist European countries is still limited. This special issue is a contribution to further our knowledge on this topic and an attempt to introduce theoretical and empirical perspectives on entrepreneurial functions and activities in those countries, as well as on their transformations over time. The focus on the formal and the informal dimensions in innovation processes and networks rendered the

complexity of factors affecting companies' creation and innovative performance. The attention to spin-offs sheds light on one of the primary mechanisms through which science is transformed into innovation. Indeed, despite the papers do not share a single research approach, they offer a variety of convergent perspectives that contribute to enlighten the emergence of innovation in firms.

Eventually, we express our gratitude to the Authors and Reviewers for their contribution to this special issue. To the Readers, we wish an exciting journey of discovery.

Endnotes

[1] The workshop was hosted by the IFZ – Inter-University Research Centre for Technology, Work and Culture in Graz, which is the Graz unit of the Department for Science and Technology Studies at the University of Klagenfurt. The workshop was co-organized by the Centre for environmental law decisions and corporate ethical certification of the University of Padua (Italy), the Department of Social and Political Sciences of the University of Trieste (Italy), the Jacques Maritain Institute (Trieste, Italy), Centre for the Social Studies of Science of the University of Ljubljana, and the Research Network 1989. The workshop was funded by the Austrian Federal Ministry of Science and Research (funding programme "Graduiertenförderung GSK"), AREA Science Park (Trieste, Italy) and the Jacques Maritain Institute (Trieste, Italy).

[2] The *IAREG – Intangible Assets and Regional Economic Growth* project was supported by the 7th Framework Programme of the European Union under grant agreement n° 216813.

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